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SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 9 IN SET 194

	Production changes on Motorola Ch. TS-410A through Ch. TS-410A-01 are covered in Photofact Folder 9, Set 194. Later production changes are covered in this bulletin.
Models 17T13Y, 17T14, 17T14Y	Models 17T13Y (Ch. TS-410Y), 17T14 (Ch. VTS-410) and 17T14Y (Ch. VTS-410Y) have, also, been added. These Models are identical to Model 17T13, except, for the following:
Ch. VTS-410, VTS-410Y	Electrically, Ch. VTS-410 is identical to Ch. TS-410 with the corresponding suffix. Mechanically, chassis with the "V" prefix use different picture tube support brackets.
Ch. TS-410Y, VTS-410Y	When the "Y" suffix is added to the chassis and model number it signifies that the set contains a factory installed UHF converter. Ch. TS-410Y use UHF converter TT50M and Ch. VTS-410Y uses UHF converter TT58M. For service data on these UHF converters refer to Model TK-17M, Set 193-5.
Ch. TS-410A-02	The focus anode bypass capacitor, C43, was omitted and a 100KΩ, 1 watt resistor was added in series with the lead from the center terminal of the focus control (R7) to pin 6 of the picture tube. The addition of this resistor decreases the possibility of failure of the focus control.
Ch. TS-410A-03, TS-410AY-03	Chassis coded "A-03" are identical to chassis coded "A-02". This was due to an error in the coding of some chassis.
Ch. TS-410A-04, TS-410AY-04	In chassis coded "A-04", the on/off switch was moved to the hot side of the AC line.
Ch. TS-410A-05, TS-410AY-05	To reduce horizontal drive and foldover, R76 was changed from 4700Ω to 6800Ω, R78 was changed from 4700Ω to 5600Ω, and C76 was changed from .002MFD to 4700MMF in chassis coded "A-05".
Ch. TS-410A-06, TS-410AY-06, VTS-410A-06, VTS-410AY-06	The UHF converter filament transformer primary was moved to the input side of the fusing resistor, R80, in chassis coded "A-06".
Ch. TS-410A-07 TS-410AY-07, VTS-410A-07, VTS-410AY-07	To increase the blanking pulse at the grid of the picture tube, R64, was changed from 3300Ω to 1800Ω and R65 was changed from 1800Ω to 3300Ω in Chassis coded "A-07".
Ch. TS-410A-08 TS-410AY-08, VTS-410A-08, VTS-410AY-08	To eliminate high voltage flashover in the picture tube, the focus anode bypass capacitor, C43 (5000MMF, 2000V.), which was omitted in chassis coded "A-02" above, is included in chassis coded "A-08". In chassis coded "A-08" the 100KΩ resistor, which was added with code "A-02", and the 5000MMF capacitor are both included. C68 and C84 were, also, changed to 5000MMF (2000V) capacitors in chassis coded "A-08". This change was made to eliminate high voltage flashover in the vertical output and the damper tubes respectively.

MOTOROLA MODELS 17T13 (Ch. TS-410) 17T13Y (Ch. TS-410Y) 17T14 (Ch. VTS-410) 17T14Y (Ch. VTS-410Y)

PRODUCTION CHANGES
BULLETIN 76

PRODUCTION CHANGES
BULLETIN 76

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Earlier production of Firestone Models 13-G-110A, 13-G-115, 13-G-116, 13-G-119 and 13-G-120 are covered in Photofact Folder 5, Set 182 and Production Change Bulletin 60, Set 194-1. Later production changes are covered in this bulletin.

Model 13-G-127

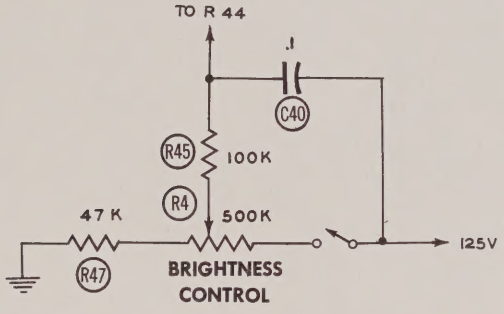
Model 13-G-127 is electrically identical to this group except, for the following:

The Vertical Linearity Control (R2) is changed to 4KΩ (part #40X368) and the resistor in series with the control (R82) is changed to 820Ω.

The horizontal multivibrator cathode resistor, R94, is changed to 2200Ω.

R107, in the low voltage power supply is changed to 2200Ω.

The On/Off switch is a DPST switch. The addition pole is connected between the 125V. source and the brightness control so that when the receiver is turned off the 125V. source is removed from the control. A partial schematic of this circuit is given below.



Initial production of Model 13-G-127 included all the following changes in addition to those given in Production Change Bulletin 60.

Models
13-G-110A
13-G-115
13-G-116
13-G-119
13-G-120
13-G-127

AGC THRESHOLD CONTROL ADDED

A 2.5Meg potentiometer (part #40X364) and a 2.7Meg resistor, connected in series, were added between the AGC line to the tuner and the 125 volt line. This control and resistor combination take the place of the 3.9Meg resistor (R32), which is omitted when the control is used.

To adjust the control, tune in the strongest available signal and turn the control clockwise until overloading occurs. Then, turn the control a few degrees counter clockwise until the overloading disappears.

NEW POWER TRANSFORMER

Some chassis may use a different power transformer, which has the 5U4, low voltage rectifier, mounted in the top cover of the transformer. The part number for this power transformer is 53X331.

NEW DAMPER TUBE

Interferance in nearby broadcast receivers, caused by radiation from the horizontal output circuit into the AC line has been reduced by using a 6AX4 tube instead of the 6W4 damper tube.

When the 6AX4 tube is used, the lead from terminal 3 of the horizontal output transformer (T3) to pin 7 of the damper is removed and pin 7 is grounded.

TO ELIMINATE DRIVE BAR

The coupling capacitor between the horizontal multivibrator and the horizontal output tube (C80) was changed from 270MMF to 200MMF.

SERVICE HINT

In some new television areas, particularly where final transmitter adjustments have not been made, horizontal jitters may be noticed. This is usually caused by phase shift in the timing circuits of the transmitter.

This condition can be reduced by removing the long time constant filter network (R93-C74) from pin 4 of V18.

If this network is removed it will increase the tendency to bend at the top of the picture, however, in most cases it will not be severe enough to be objectionable.

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3934 KING ST.
DENVER, COLORADO

BUICK
MODEL 981320

TRADE NAME	Buick Model 981320 (For 1953 Series 40 Buick Automobiles)
SUPPLIER	Buick Motor Div., General Motors Corp., Detroit, Mich.
TYPE SET	Battery Operated Custom Built Automobile Superheterodyne Receiver
TUBES (Seven)	Types 6BA6 RF Amp., 6BE6 Conv., 6BA6 IF Amp., 6SR7 Det.-AVC-AF Amp., (2) 6V6GT Audio Output, 0Z4 Rectifier
POWER SUPPLY	6 Volt Storage Battery RATING 4.6 Amp. @ 6.3 Volts DC
TUNING RANGE—BROADCAST	550-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Turn tone control maximum clockwise.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 6BE6 (V2). Low side to chassis.	262KC	High frequency end stop	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	82MMF	High side through dummy antenna to antenna connector. Low side to chassis.	1615KC	"	"	A5, A6, A7	Preset middle slug so that end of core is 1-25/32" inside the mounting end of the coil form. Adjust A5, A6 and A7 in order given for maximum output.
3.	"	"	1000KC	Tune to 1000KC signal	"	A8, A9	Adjust for maximum output.
4.	"	"	1615KC	High frequency end stop	"	A6, A7	"
5.	"	"	1000KC	Tune to 1000KC signal	"		If necessary set dial pointer to coincide with the first "0" of "100" by readjusting pointer adjustment screw.

With radio installed in car and antenna extended normally adjust A7 for maximum volume on a weak signal between 600-1000KC.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		BUICK PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6BA6	6BA6	7BK	
V2	Converter	6BE6	6BE6	7CH	
V3	IF Amplifier	6BA6	6BA6	7BK	
V4	Det-AVC-AF Amp.	6SR7	6SR7	8Q	
V5	Audio Output	6V6GT	6V6GT	7S	
V6	Audio Output	6V6GT	6V6GT	7S	
V7	Rectifier	0Z4	0Z4	4R	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	BUICK PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	■20	400	M908	AFH3-120		CO99		FP345.8	TVL-3678	
B	▲20	400								
C	20	25								
C2	.05	200	6512	P288-05	DF-503	PJ2S5		PT415	2TM-S42	
C3	39	500	G390	SI39	D6-390		GP1K-390	UC-5439	5GA-Q39	
C4	.1	400	6513	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C5	39	500	G390	SI39	D6-390		GP1K-390	UC-5439	5GA-Q39	
C6	160		7257424							
C7	10	500	G100	1469-00001		5R5Q1		MCB-215	MS-41	
C8	.005	600	6531	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C9	220	500	G221	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
C10	.2	400	6514	P488-2		PTE4P22		PT402	4TM-P2	
C11	.0025	400	7240578	P488-0022	D6-252	PTE6D22	GP2-333-252	PT6222	4TM-P22	
C12	120	500	G121	SI120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C13	.025	400	1211232	P488-025	DD-203	PTE4S22		PT4122	4TM-S22	
C14	.015	600	7236134	P688-015		PTE6S15			6TM-S15	
C15	.5	100	6592	VHC-36		MP2P5		RF-480	68P20	
C16	.006	1600	H602	P1688-006		PTE16D6		PT1626	MB-D6	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	BUICK PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	300KΩ	½	7263119				UF55A	Tone - Panel
B	1 Meg	½					UR16-T35	Volume Tap@300KΩ-Rear
C	Bushing						EB-214	Attach to R1A
D	Switch						US-26	Attach to R1B

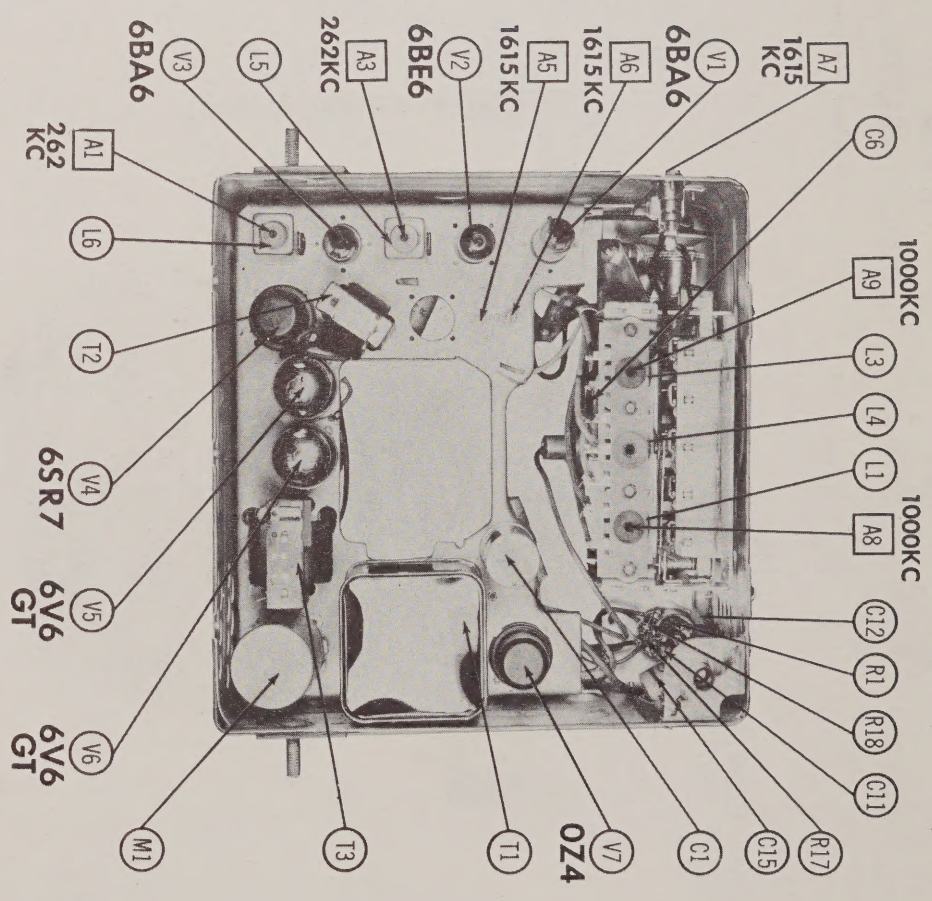
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	BUICK PART No.	IRC PART No.	
R2	2.2Meg	½	A225	BTS-2.2Meg	
R3	150Ω	½	A151	BTS-150	
R4	15KΩ	1	B153	BTA-15K	
R5	330KΩ	½	A334	BTS-330K	
R6	22KΩ	½	A223	BTS-22K	
R7	15KΩ	2	C153	BTB-15K	
R8	150Ω	½	A151	BTS-150	
R9	1 Meg	½	A105	BTS-1 Meg	
R10	1 Meg	½	A105	BTS-1 Meg	
R11	27KΩ	1	B273	BTA-27K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	BUICK PART No.	IRC PART No.	
R12	47KΩ	½	A473	BTS-47K	
R13	820KΩ	½	1214561	BTS-820K	
R14	1000Ω	½	A102	BTS-1000	
R15	2200Ω	½	A222	BTS-2200	
R16	1 Meg	½	A105	BTS-1 Meg	
R17	68KΩ	½	A683	BTS-68K	
R18	470KΩ	½	A474	BTS-470K	
R19	360Ω	2	7234563		
R20	1800Ω	2			Note
R21	220Ω	1	B221	BTA-220	

Note. Replace with 2700Ω (2 Watt) & 5600Ω (1 Watt) in parallel.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	BUICK PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	6.3VAC @3.8A	490VCT .064ADC			7261410		P-4071		

TRANSFORMER (INPUT)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	BUICK PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T2	1.8KΩ CT				7258941				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		BUICK PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T3	7.8KΩ CT	3.8Ω	368Ω CT	.34Ω	7260855	A-3852	A-2936	RO-110	S-15X	

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	BUICK PART No.	JENSEN PART No.	QUAM PART No.	
SP1	8"	PM	3.8Ω	7259502	ST-115 Mod. P8-V	8A31	

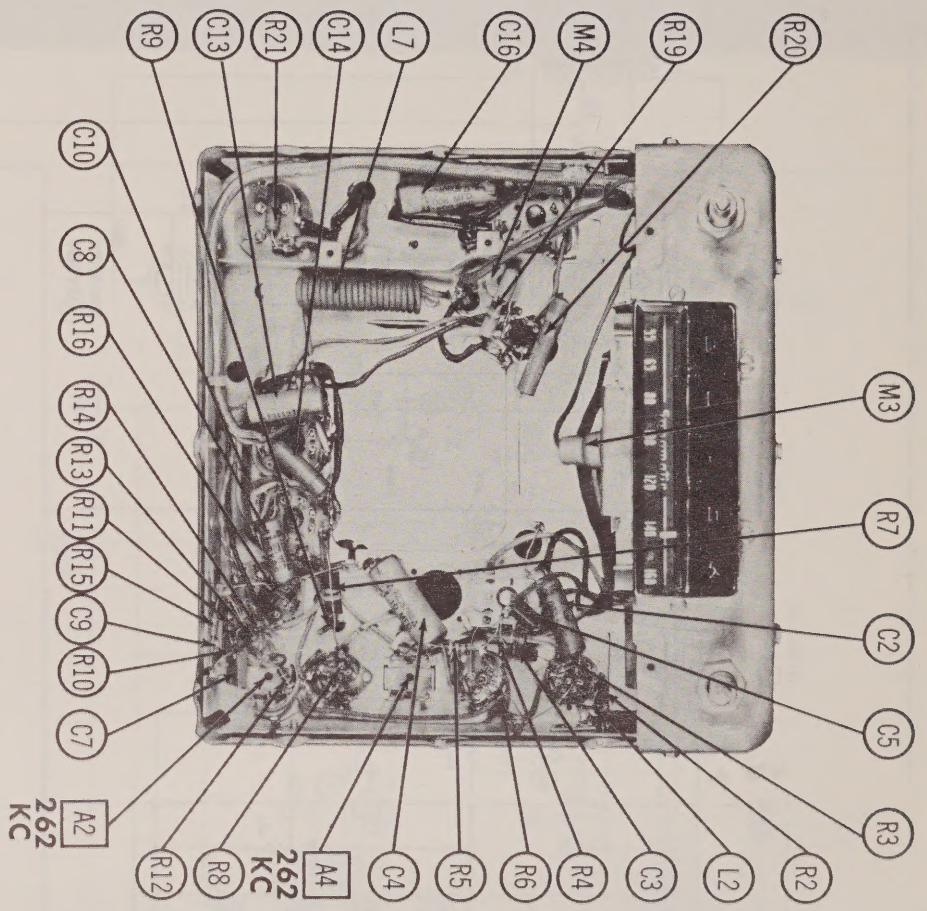
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	BUICK PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Coil	9.5Ω		7258914				Less core, core part #7258468
L2	RF Coupling	4.4Ω		7240251			4626	28 Microhenries
L3	RF Coil	10Ω		7258 914				Less core, core part #7258468
L4	Osc. Coil	1.1Ω	4.8Ω	7260499				Less core, core part #7258468
L5	Input IF	33Ω	32Ω	1218725	16-6752	BC-350	12-H1	
L6	Output IF	33Ω	34Ω	1218726	16-6754	BC-354	12-H6	
L7	Fil. Choke	0Ω		1217846				

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FRE-QUENCY	REPLACEMENT DATA				NOTES
				BUICK PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	RADIART PART No.	
M1	Interrupter	6.3V	115v	7239124	5300	859	5300	

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			BUICK PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	15Amp.	120151	1321178 7242034	311015 (3AG-15A)		AGC-15	HRJ

MISCELLANEOUS

ITEM No.	PART NAME	BUICK PART No.	NOTES
M3	Dial Light	55	Type 55
M4	Spark Plate	1217848	
A5	Trimmer Capacitor	7242454	Oscillator Adj. (Dual), Includes Fixed Trimmer
A6	Trimmer Capacitor	7242454	RF Adj. (Dual) Includes Fixed Trimmer
A7	Trimmer Capacitor	7260158	Antenna Adj. (Dual) Includes Fixed Trimmer
	Dial	7263312	
	Back Plate (Dial)	7263317	
	Pointer Assembly	7260420	
	Escutcheon Assy.	7263313	
	Push Button	1219455	"B" (Includes Slide Assembly)
	Push Button	1219456	"U" (Includes Slide Assembly)
	Push Button	1219457	"I" (Includes Slide Assembly)
	Push Button	1219458	"C" (Includes Slide Assembly)
	Push Button	1219459	"K" (Includes Slide Assembly)

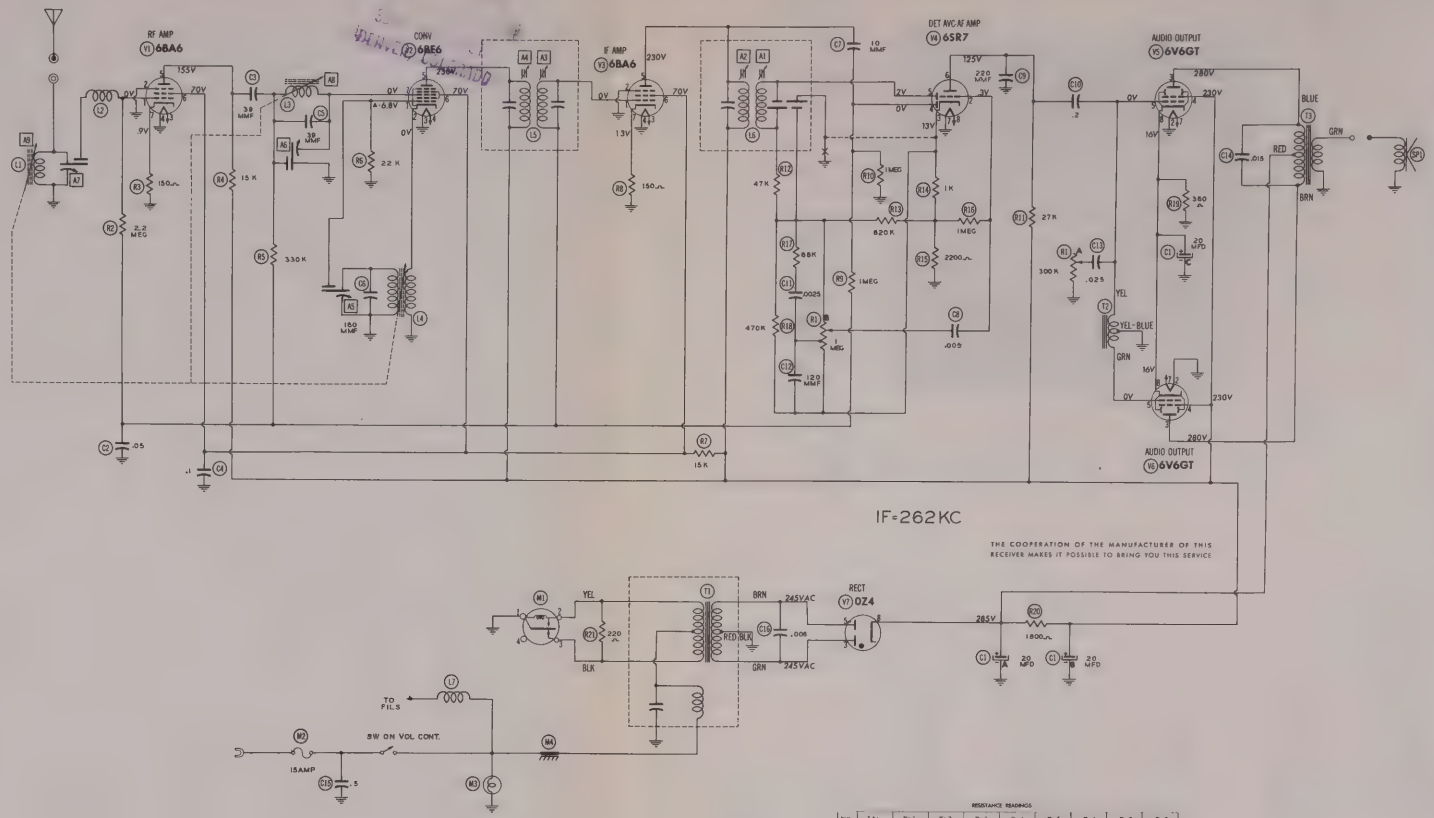
PUSH BUTTON ADJUSTMENT

Release push button by pulling to the left and outwards.

Tune manually to the desired station.

Press button all the way in.

Repeat above procedure for remaining push buttons.



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BA6	4.2Meg	0Ω	1Ω	0Ω	†17KΩ	†17KΩ	150Ω	
V 2	6BE6	22KΩ	1.1Ω	0Ω	.1Ω	†1.8KΩ	†17KΩ	3.3Meg	
V 3	6BA6	3 Meg	0Ω	.1Ω	0Ω	†1.8KΩ	†17KΩ	150Ω	
V 4	6SR7	0Ω	1 Meg	3.2KΩ	1 Meg	370KΩ	†39KΩ	0Ω	.1Ω
V 5	6V6GT	3.2KΩ	0Ω	†185Ω	†1.8KΩ	800Ω	DNF	.1Ω	380Ω
V 6	6V6GT	DNF	0Ω	†175Ω	†1.8KΩ	1 KΩ	80Ω	.1Ω	380Ω
V 7	0Z4	0Ω	DNF	350Ω	DNF	350Ω	DNF	DNF	DNF

MEASUREMENTS TAKEN WITH "TONE CONTROL" AT MINIMUM RESISTANCE (FCCW)
* TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 8 OF V7

1 - DC Voltage measurements are at 20,000 ohms per volt, AC voltage measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6.3 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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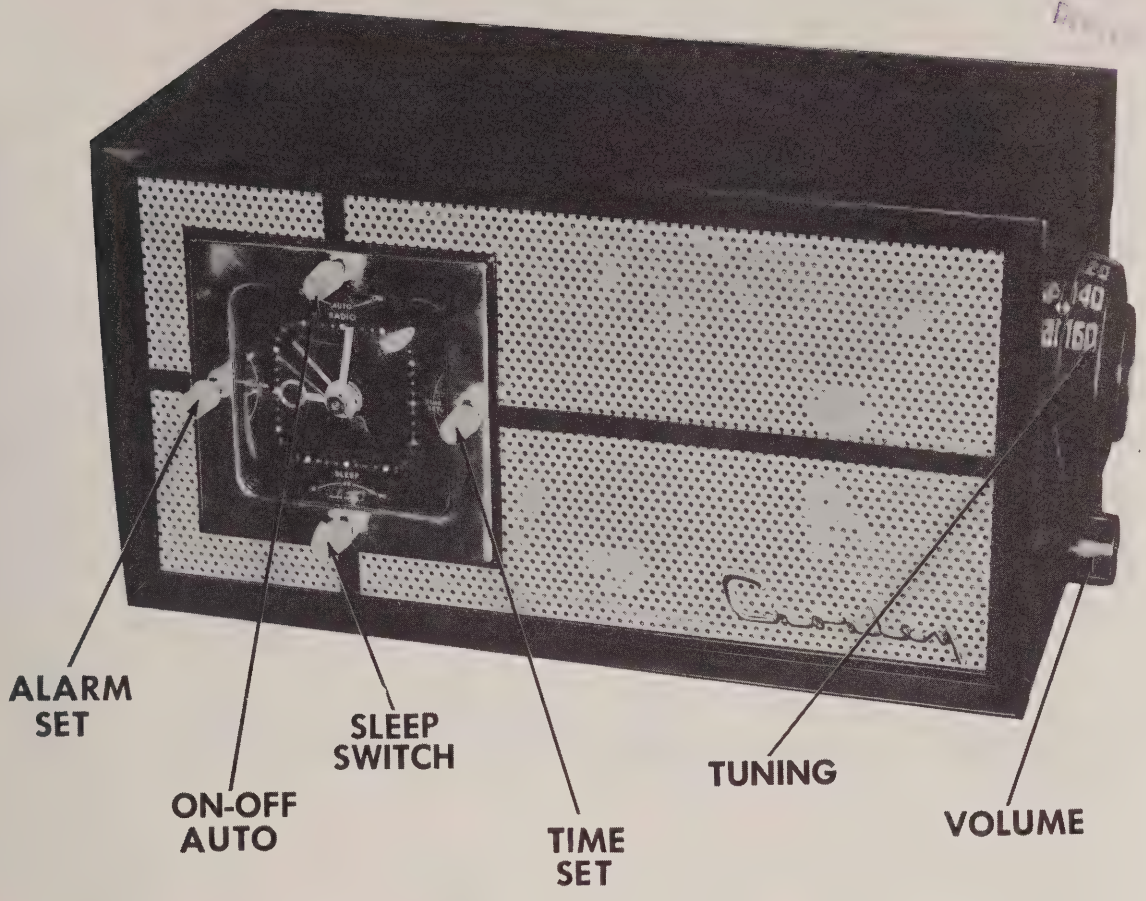
CROSLEY MODELS E-75, CE, GN, RD, TN (Ch. 75E), E-85, CE, GN, RD, TN (Ch. 85E)

CROSLEY MODELS E-75, CE, GN, RD, TN (Ch. 75E), E-85, CE, GN, RD, TN (Ch. 85E)



CROSLEY MODELS E-75, CE, GN, RD, TN (Ch. 75E), E-85, CE, GN, RD, TN (Ch. 85E)

TRADE NAME	Crosley Models E-75, CE, GN, RD, TN (Ch. 75E), E-85, CE, GN, RD, TN (Ch. 85E)
MANUFACTURER	Crosley Corp., 1329 Arlington St., Cincinnati, Ohio
TYPE SET	AC Operated AM Superheterodyne Receiver with Electric Clock
TUBES (Five)	Types 12BE6 Conv., 12BD6 IF Amp., 12AT6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	105-125 Volts AC-60 Cycles — RATING .27 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	200MMF	High side to ungrounded side of loop. Low side to B-.	455KC (400~Mod)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1400KC	Tune to 1400KC signal	"	A6	"

To set pointer turn tuning gang fully closed and set top edge of "55" on dial to index on cabinet.

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PARTS LIST AND DESCRIPTIONS

CROSLEY
MODEL E-75 (Ch. 75E)

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		CROSLEY PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BD6	12BD6	7BK	
V3	Det.-AVC-AF Amp	12AT6	12AT6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	CROSLEY PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	50	150	155006	PRS150/50-30		EDL5315		2N520	TVA-2450	Red Blue
B	30	150							4TM-S68	
C2	.068	200	39477-46	P288-068		PTE4S68				
C3	100		137727-8	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C4	39		137727-109	SI39	D6-390		GP1K-390	UC-5439	5GA-Q39	
C5A	220									
B	.002									
C	.005		♦151550-1		♦PC150		♦1408-01		♦103C4	
D	250									
E										
C6	.022	400	39477-43	P488-022		PTE4S22		PT4122	4TM-S22	
C7	.047	400	39477-45	489ZX-047		PTE4S47		PT4147	4TM-S47	
C8	.068	200	39477-46	P288-068		PTE4S68			4TM-S68	

♦ Items C5A, C5B, C5C, C5D, C5E, R6A, R6B, R6C are combined in one unit.
When replacing items separately items C5D, and C5E should total 250MMF.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	CROSLEY PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	1Meg	½	B-154961	Q13-137	AG-63-Z	AB-70	U-53	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R1A

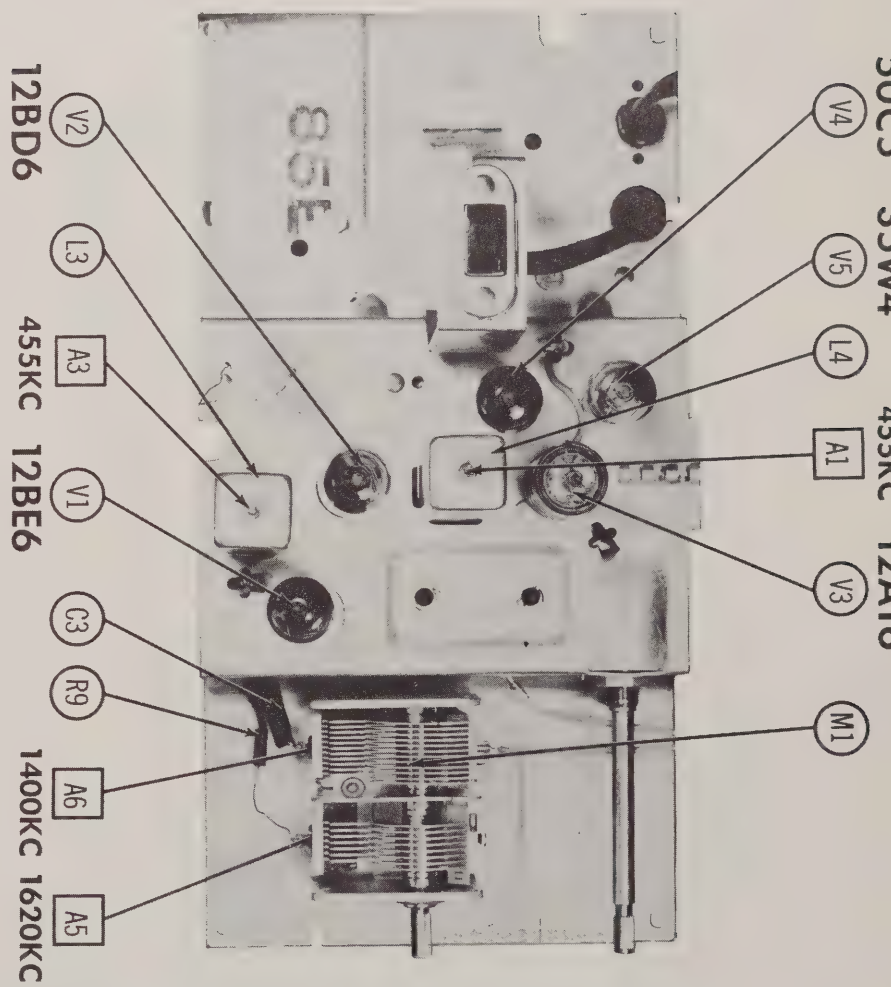
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	CROSLEY PART No.	IRC PART No.	
R2	1Meg	½	39374-61	BTS-1Meg	
R3	22KΩ	½	39374-41	BTS-22K	
R4	2.2Meg	½	39374-69	BTS-2.2Meg	
R5	47KΩ	½	39374-45	BTS-47K	
R6A	6.8Meg	½		BTS-6.8Meg	
B	470KΩ	½	♦151550-1	BTS-470K	
C	470KΩ	½		BTS-470K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	CROSLEY PART No.	IRC PART No.	
R7	150Ω	½	39374-15	BTS-150	
R8	1200Ω	1	39374-114	BTA-1200	
R9	10Ω	½	39374-1		

♦ Items R6A, R6B, R6C, C5A, C5B, C5C, C5D, C5E are combined in one unit.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		CROSLEY PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.4KΩ	3.5Ω	214Ω	.68Ω	155015	A-3332	A-2928 ①	RO-302 ①	S-1X ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	CROSLEY PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.5Ω	D-154986-A 138762-8 ①	ST-113 Mod. P4-X	4A1	① Alternate speaker

COILS (RF-IF)

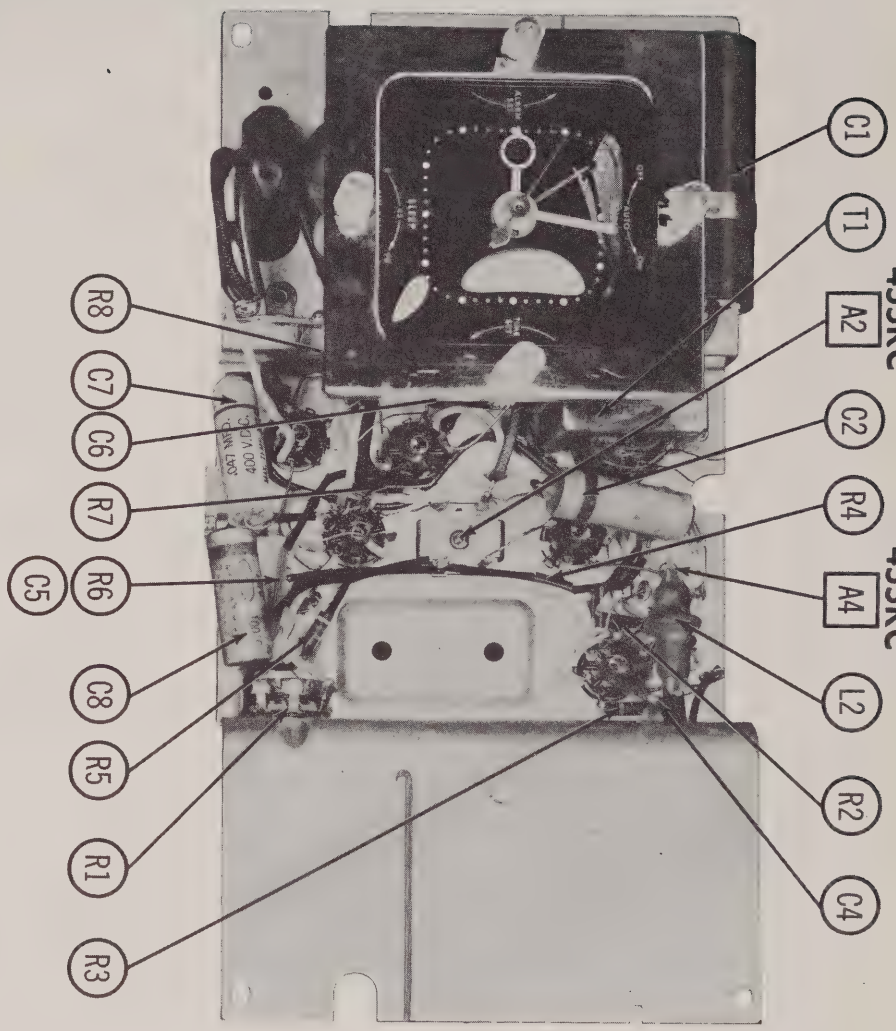
ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	CROSLEY PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Ant.	3Ω		155042 *				Includes cabinet back, Used in Ch. 85E only
L2	Osc. Coil	.8Ω	10Ω	153405			71-Osc.▲	
L3	Input IF	15Ω	15Ω	155007-1	16-6758	BC-352	12-C1	
L4	Output IF	15Ω	20Ω	155007-1	16-6758	BC-353	12-C2	

* Ch. 75E uses part #154987 in this application, includes cabinet back.
▲ Drill mounting hole.

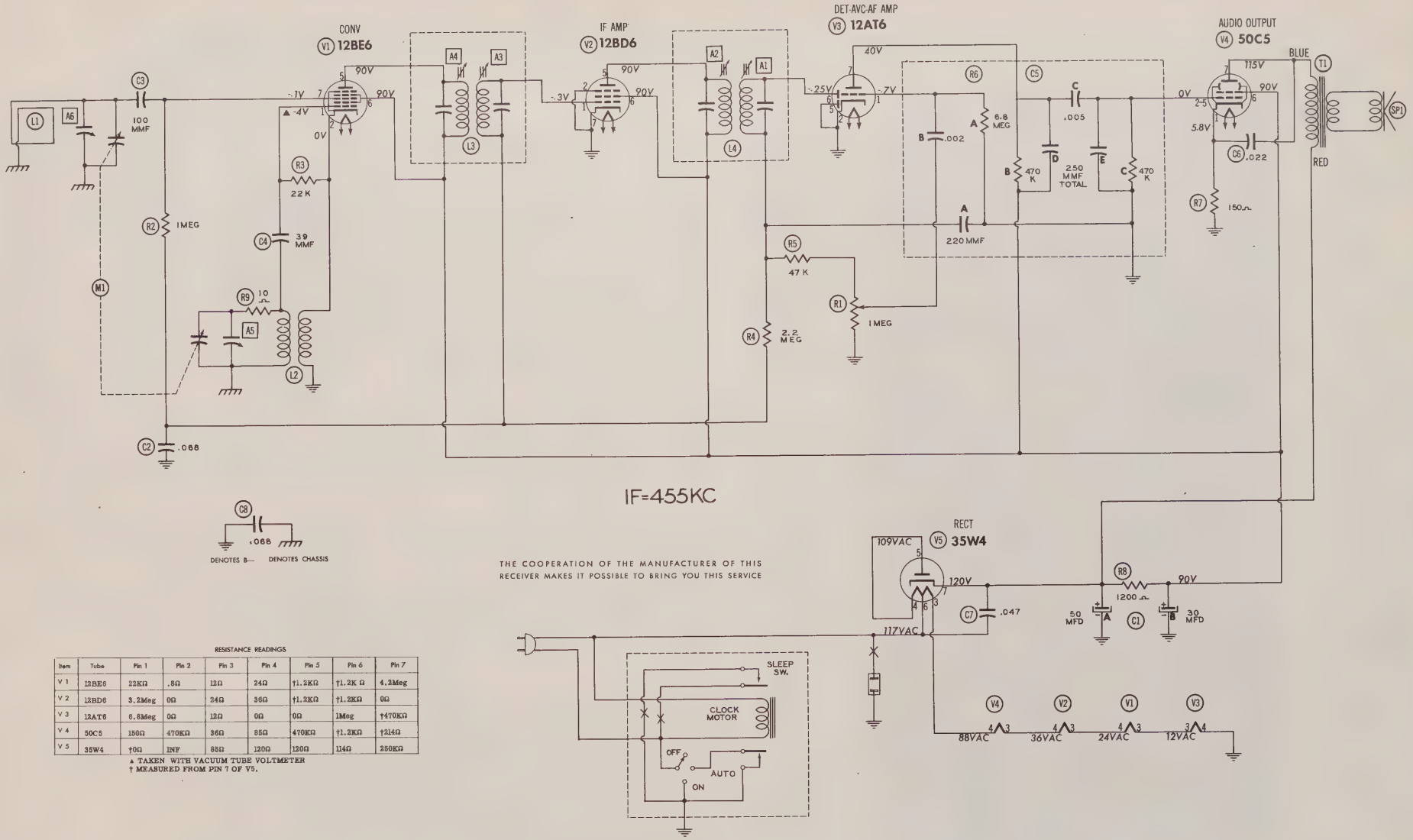
MISCELLANEOUS

ITEM No.	PART NAME	CROSLEY PART No.	NOTES
M1	Tuning Cap.	154962	23-415MMF, 14-107MMF
	Clock Assy.	154971	E-75 Series
	Clock Assy.	155107	E-85 Series
	Cabinet	155214-1	Model E-75CE
	Cabinet	155214-2	Model E-75RD
	Cabinet	155214-3	Model E-75TN
	Cabinet	155214-4	Model E-75GN
	Cabinet	155214-5	Model E-85CE
	Cabinet	155214-6	Model E-85RD
	Cabinet	155214-7	Model E-85TN
	Cabinet	155214-8	Model E-85GN
	Grille	155017-1	Model E-75CE
	Grille	155017-2	Model E-75RD
	Grille	155017-3	Model E-75TN
	Grille	155017-4	Model E-75GN
	Grille & Bar Assy.	155021-1	Model E-85CE
	Grille & Bar Assy.	155021-2	Model E-85RD
	Grille & Bar Assy.	155021-3	Model E-85TN
	Grille & Bar Assy.	155021-4	Model E-85GN
	Knob	155061-1	Volume
	Knob	154062-1	Tuning

CHASSIS—BOTTOM VIEW



CROSLEY
MODEL E-75 (Ch. 75E)



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.8Ω	12Ω	24Ω	†1.2KΩ	†1.2K Ω	4.2Meg
V 2	12BD6	3.2Meg	0Ω	24Ω	36Ω	†1.2KΩ	†1.2KΩ	0Ω
V 3	12AT6	6.8Meg	0Ω	12Ω	0Ω	0Ω	1Meg	†470KΩ
V 4	50C5	150Ω	470KΩ	36Ω	85Ω	470KΩ	†1.2KΩ	†214Ω
V 5	35W4	†0Ω	INF	85Ω	120Ω	120Ω	114Ω	250KΩ

▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 7 OF V5.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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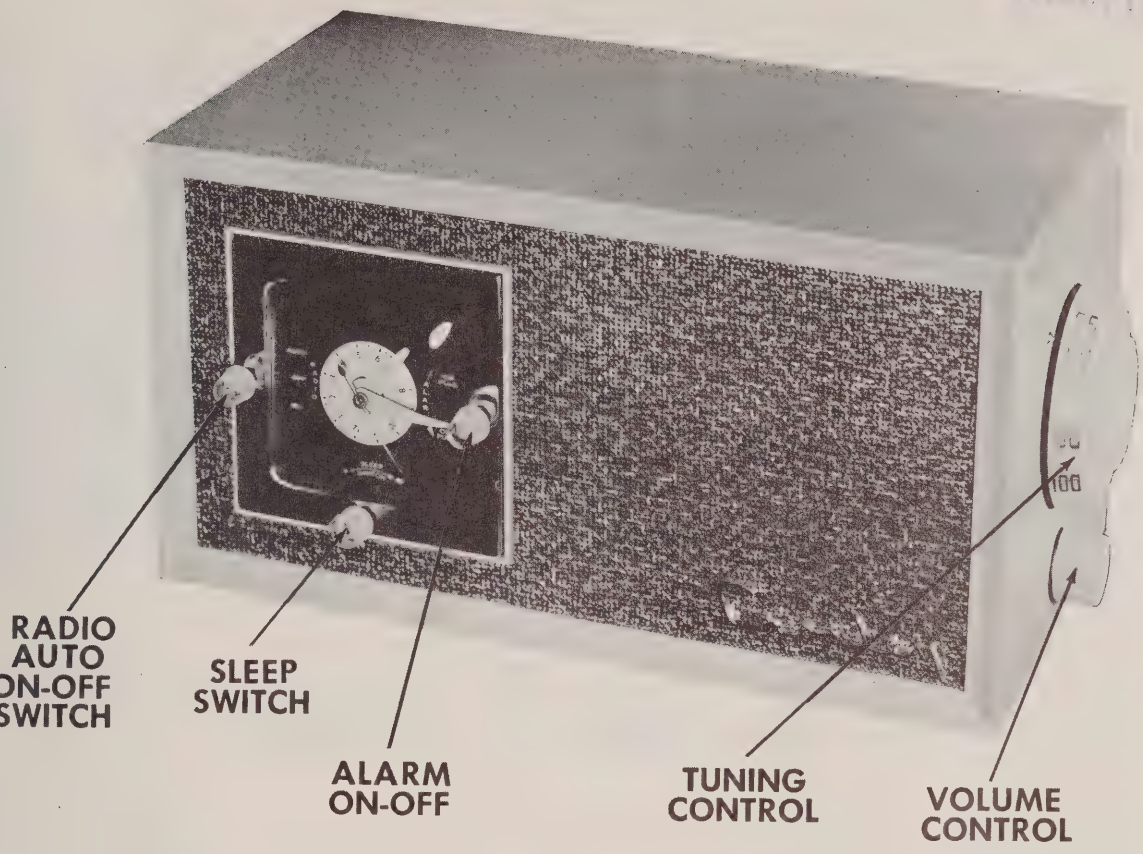
217-3

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

CROSLEY
MODELS E-90BK, CE, GY, RD, WE

CROSLEY
MODELS E-90BK, CE, GY, RD, WE



CROSLEY
MODELS E-90BK, CE, GY, RD, WE

TRADE NAME	Crosley Models E-90BK, CE, GY, RD, WE (Ch. 90E)
MANUFACTURER	Crosley Corp., 1329 Arlington St., Cincinnati, Ohio
TYPE SET	AC Operated AM Superheterodyne Receiver with Electric Clock
TUBES (Five)	Types 12BE6 Conv., 12BA6 IF Amp., 12AT6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	105-125 Volts AC-60 Cycles — RATING .27 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
In order to adjust bottom slugs of IF transformers it will be necessary to remove speaker from the chassis. (Do not remove wires from speaker.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	200MMF	High side to ungrounded side of loop. Low side to B-.	455KC (400~Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1400KC	Tune to 1400KC signal	"	A6	"

To set pointer, turn tuning gang fully closed and set top edge of "55" on dial to index on cabinet.

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PARTS LIST AND DESCRIPTIONS

CROSLEY
MODEL E-90BK (Ch. 90E)

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		CROSLEY PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det-AVC-AF Amp.	12AT6	12AT6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	CROSLEY PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	50	150	155006	PRS150/50-30		EDL5315		2N520	TVA-2450	Red
B	30	150								Blue
C2	.068	200	39477-46	P488-068		PTE4S68			4TM-S68	
C3	1000		137727-8	SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C4	39		137727-109	SI39	D6-390		GP1K-390	UC-5439	5GA-Q39	
C5A	220									
B	.002									
C	250		♦151550-1		♦PC-150		♦1408-01		♦103C4	
D										
E	.005									
C6	.022	400	39477-43	P488-022	DD-203	PTE4S22		PT4122	4TM-S22	
C7	.047	400	39477-45	489ZX-05		PJ4S5		PT4147	4TM-S47	
C8	.068	200	39477-46	P288-068		PTE4S68			4TM-S68	
C9	50		143686-1							

♦ Items C5A, C5B, C5C, C5D, C5E, R7A, R7B, R7C are combined in one unit.
When replacing items separately, C5C and C5D should total 250MMF.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	CROSLEY PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	1 Meg	½	B154961	Q13-137	AG-63-Z	AB-70	U-53	Volume
B	Shaft		Not Req.	Not Req.	KSS-4	AK-4	Not Req.	Attach to R1A

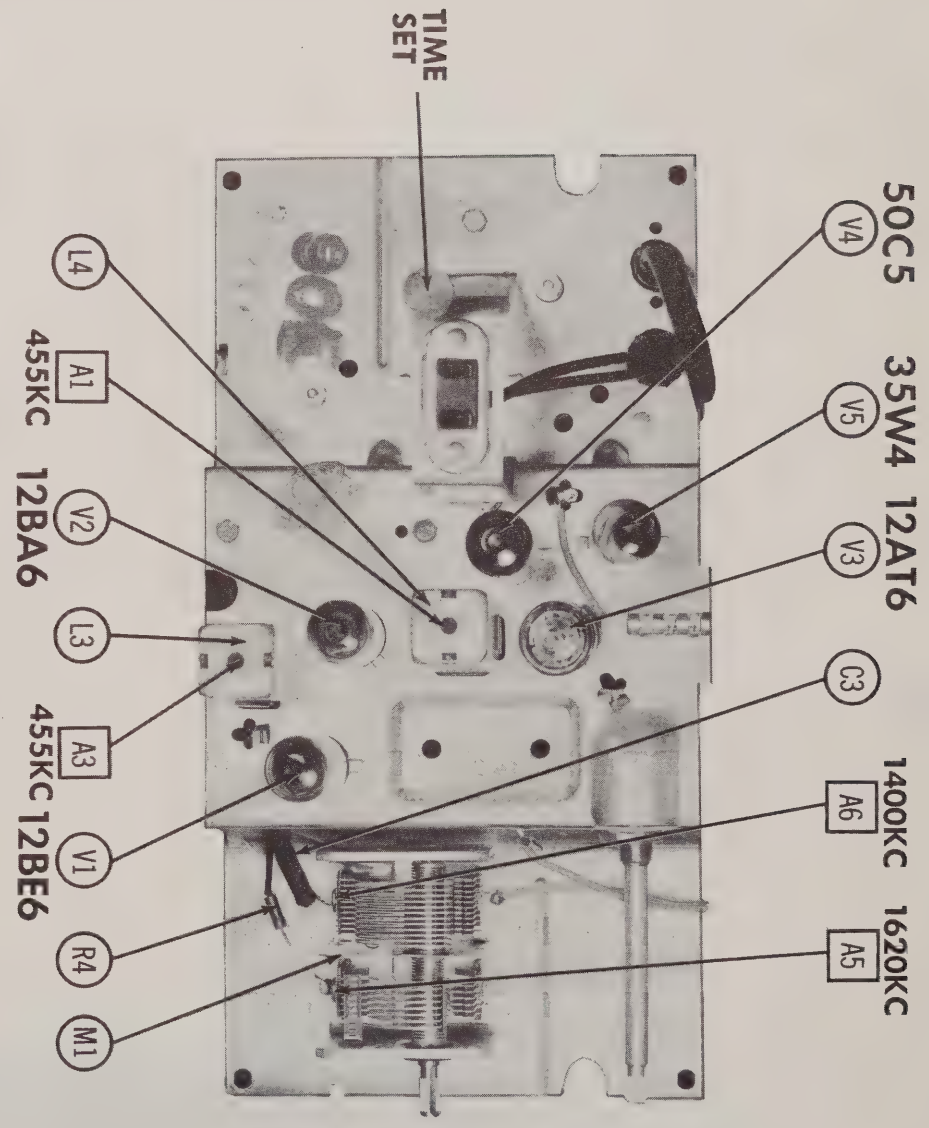
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	CROSLEY PART No.	IRC PART No.	
R2	1 Meg	1/2	39374-61	BTS-1 Meg	
R3	22KΩ	1/2	39374-41	BTS-22K	
R4	10Ω	1/2	39374-1		
R5	2.2Meg	1/2	39374-69	BTS-2.2Meg	
R6	47KΩ	1/2	39374-45	BTS-47K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	CROSLEY PART No.	IRC PART No.	
R7A	6.8Meg	1/2	♦151550-1	BTS-6.8Meg	
B	470KΩ	1/2		BTS-470K	
C	470KΩ	1/2		BTS-470K	
R8	150Ω	1/2	39374-15	BTS-150	
R9	47Ω	1	39374-9		Note
R10	1200Ω	1	39374-114	BTA-1200	

Note . Not used in all models.
♦ Items R7A, R7B, R7C, C5A, C5B, C5C, C5D, C5E are combined in one unit.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		CROSLEY PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.4KΩ	3.6Ω	214Ω	.68Ω	155015	A-3876	A-2928 ①	RO-302 ①	S-1X ①	①Drill one new mtg. hole.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	CROSLEY PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.6Ω	154986-A 138762-8①	ST-113 Mod. P4-X	4A07	① Alternate 4" speaker

COILS (RF-IF)

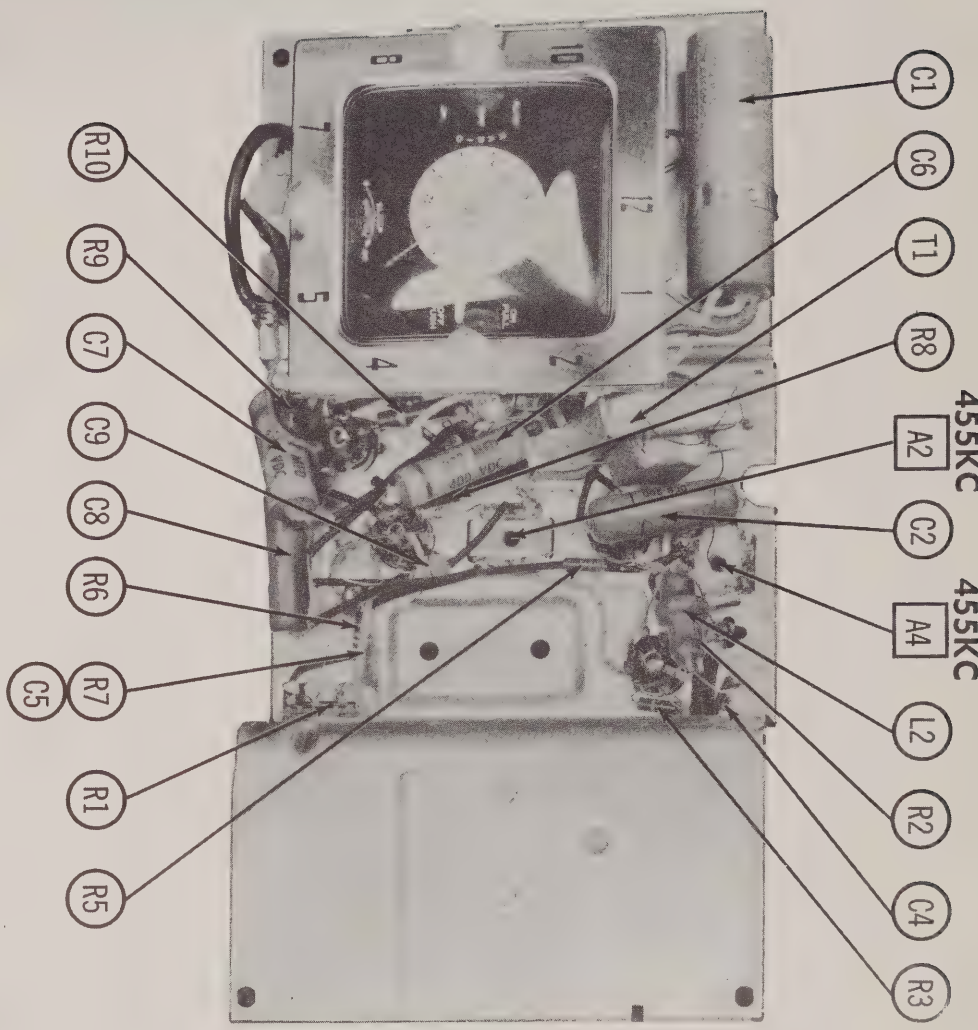
ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	CROSLEY PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Ant.	3.1Ω		155042				Includes cabinet back
L2	Osc. Coil	1Ω	11Ω	153405			71-Osc. *	
L3	Input IF	15Ω	15Ω	155007-1	16-6758	BC-352	12-C1	
L4	Output IF	15Ω	15Ω	155007-1	16-6758	BC-353	12-C2	

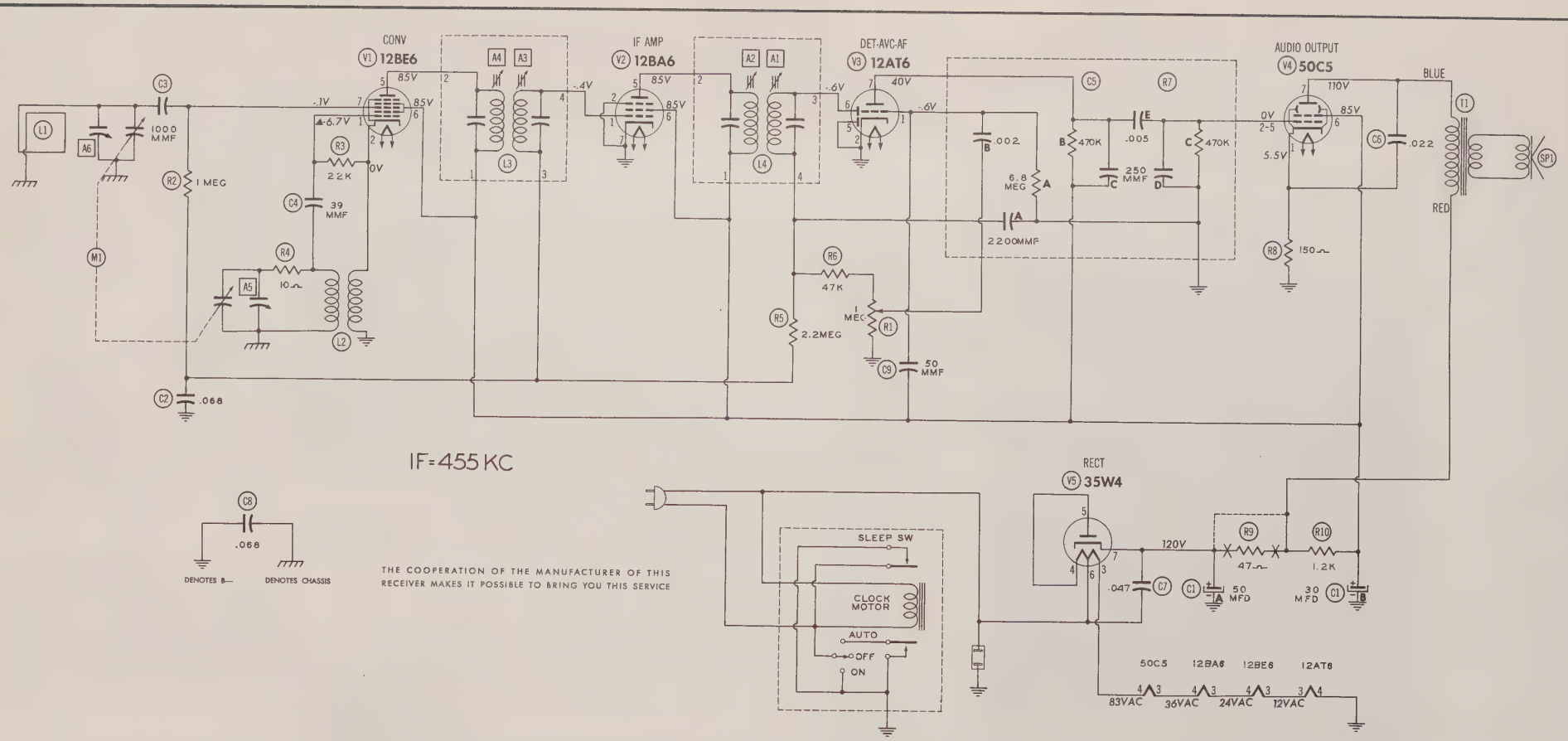
* Drill mounting hole.

MISCELLANEOUS

ITEM No.	PART NAME	CROSLEY PART No.	NOTES
M1	Tuning Cap.	154962	23-415MMF, 14-107MMF
	Clock Assy.	155631	
	Cabinet	155214-13	Model E-90BK
	Cabinet	155214-9	Model E-90CE
	Cabinet	155214-11	Model E-90GY
	Cabinet	155214-10	Model E-90RD
	Cabinet	155214-12	Model E-90WE
	Knob	155061-1	Volume, Model E-90BK
	Knob	155061-5	Volume, Model E-90CE
	Knob	155061-2	Volume, Model E-90GY
	Knob	155061-4	Volume, Model E-90RD
	Knob	155061-3	Volume, Model E-90WE
	Knob	154062-1	Tuning, Model E-90BK
	Knob	154062-5	Tuning, Model E-90CE
	Knob	154062-2	Tuning, Model E-90GY
	Knob	154062-4	Tuning, Model E-90RD
	Knob	154062-3	Tuning, Model E-90WE

CHASSIS—BOTTOM VIEW





IF=455 KC

DENOTES B— DENOTES CHASSIS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.1Ω	12Ω	24Ω	†1.2KΩ	†1.2KΩ	4.2Meg
V 2	12BA6	3.2Meg	0Ω	24Ω	36Ω	†1.2KΩ	†1.2KΩ	0Ω
V 3	12AT6	6.8Meg	0Ω	12Ω	0Ω	0Ω	1 Meg	†470KΩ
V 4	50C5	150Ω	470KΩ	36Ω	85Ω	470KΩ	†1.2KΩ	†260Ω
V 5	35W4	†47Ω	†47Ω	85Ω	120Ω	120Ω	115Ω	1 Meg

▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 7 OF V5.
NOTE: FILAMENT RESISTANCE MEASUREMENTS TAKEN WITH "OFF-ON" SWITCH IN OFF POSITION

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

CORONADO
MODEL 35RA33-43-8125

CORONADO
MODEL 35RA33-43-8125

TRADE NAME	Coronado Model 35RA33-43-8125
SUPPLIER	Gamble-Skogmo, Inc., 15 N. 8th. St., Minneapolis, Minn.
TYPE SET	AC-DC Operated AM Superheterodyne Receiver
TUBES (Four)	Types 12BE6 Conv., 12AV6 (or) 12AT6 Det.-AVC-AF Amp., 50C 5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC/DC — RATING .25 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535-1630 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	100MMF	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400~Mod)	Tuning gang fully open	Across voice coil	A1, A2	Adjust for maximum output.
2.	"	"	1630KC	"	"	A3	"
3.	"	High side to antenna lead. Low side to B-.	1400KC	Tune to 1400KC signal	"	A4	"

To set pointer turn tuning gang fully closed. Set pointer parallel with base of cabinet at low frequency end of the dial.

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PARTS LIST AND DESCRIPTIONS

CORONADO
MODEL 35RA33-43-8125

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		CORONADO PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2A	Det-AVC-AF Amp.	12AV6	12AV6	7BT	
B	Det-AVC-AF Amp.	12AT6	12AT6	7BT	
V3	Audio Output	50C5	50C5	7CV	
V4	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	CORONADO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	40	150	C40-20-1.5	PRS150/20-40		EDL4215		2N514	TVA-2438	Red
B	20	150								Blue
C2	.05	400	CO52	P488-05	DF-503	PT4S5		PT415	4TM-S5	
C3	5		C55C	SI5	D6-050		GP1K-050		5GA-V5	
C4	100	500	C1005M	1469-0001	D6-101	5W5T1	GP1K-101	MC235	MS-31	
C5	5000		C0055D	BPD-005	MD-502	TM5D5	GP2-333-502	DC-525	5HK-D5	
C6	5000		C0055D	BPD-005	MD-502	TM5D5	GP2-333-502	DC-525	5HK-D5	
C7	5000		C0055D	BPD-005	MD-502	TM5D5	GP2-333-502	DC-525	5HK-D5	
C8	.05	400	C054	489ZX-05		PT4S5		PT415	4TM-S5	
C9	.05	400	C054	P488-05		PT4S5		PT415	4TM-S5	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	CORONADO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	1 Meg	½	VRT67H	Q13-137	AG-63-Z	BSK-70-S	U-53	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A

RESISTORS

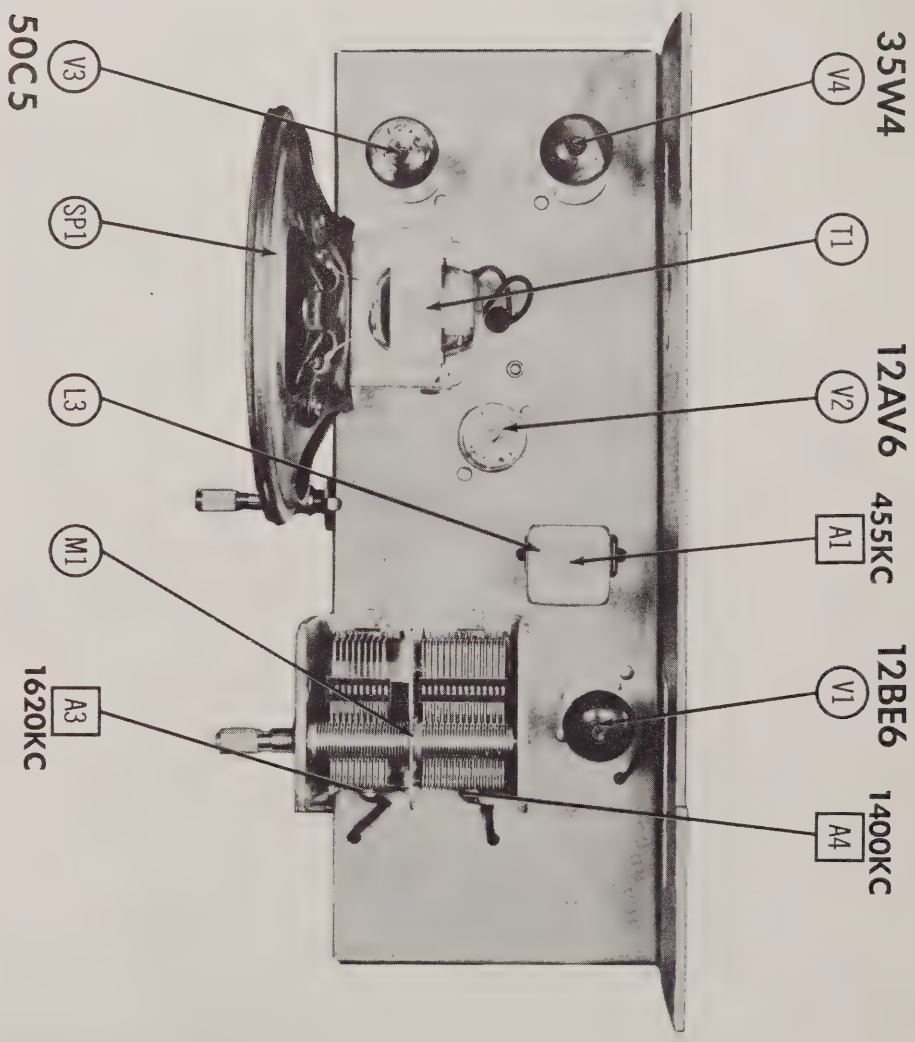
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	CORONADO PART No.	IRC PART No.	
R2	22KΩ	½	R223.5	BTS-22K	
R3	2.2Meg	½	R26.5	BTS-2.2Meg	
R4	10 Meg	½	R106.5	BTS-10Meg	
R5	470KΩ	½	R474.5	BTS-470K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	CORONADO PART No.	IRC PART No.	
R6	220KΩ	½	R220.5	BTS-220K	
R7	2200Ω	½	R223.5	BTS-2200	
R8	68Ω	2	R680.2		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		CORONADO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.5KΩ	3.2Ω	156Ω	.62Ω	Part of speaker	A-3332 ①	A-3025 ①	RO-301 ①	S-1X ①	①Bend mtg. tabs down, file out slots, mount on original mtg. bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	CORONADO PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.2Ω	71-72		4A07R	

COILS (RF-IF)

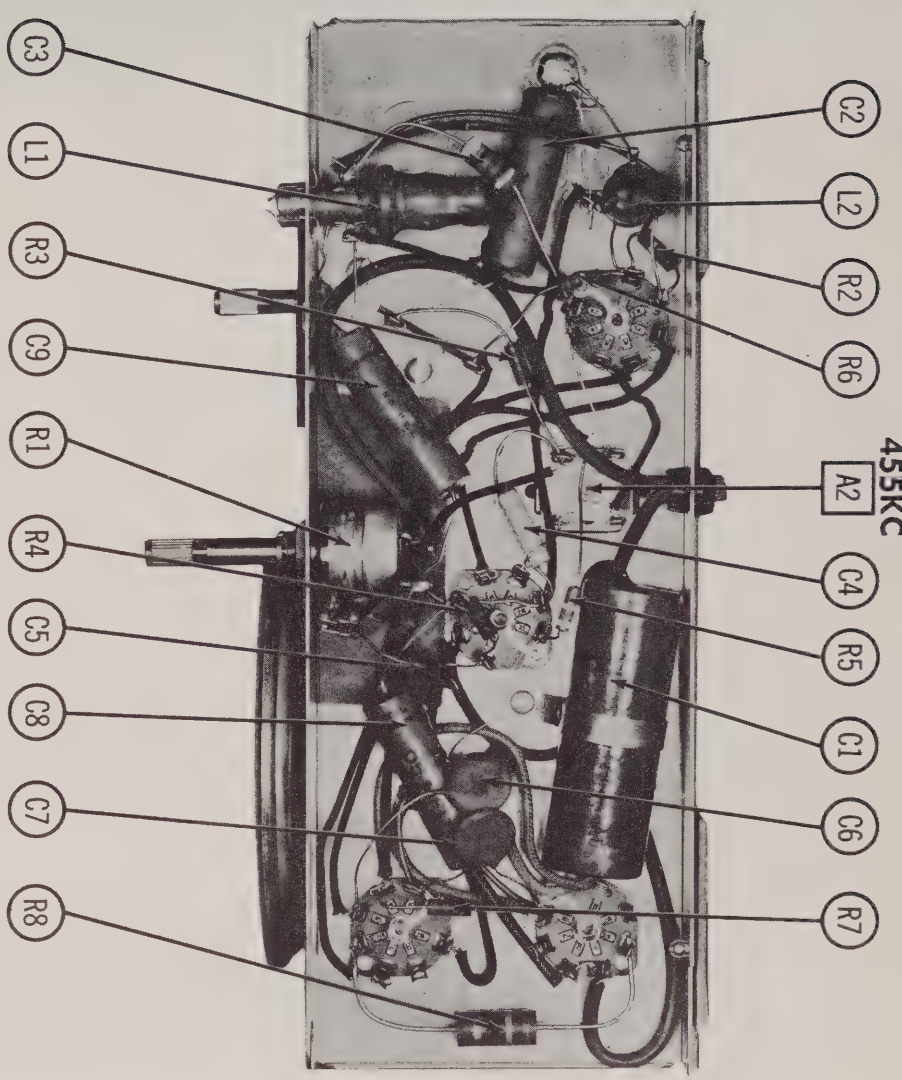
ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	CORONADO PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Coil	32Ω	2.8Ω	T64LA	14-1071	BC-380 *	70-A	
L2	Osc. Coil	.6Ω	8Ω	T64LO			69-Osc.	
L3	IF Trans.	20Ω	20Ω	T114-8				Pri. tapped @ .8Ω

* Drill mounting hole.

MISCELLANEOUS

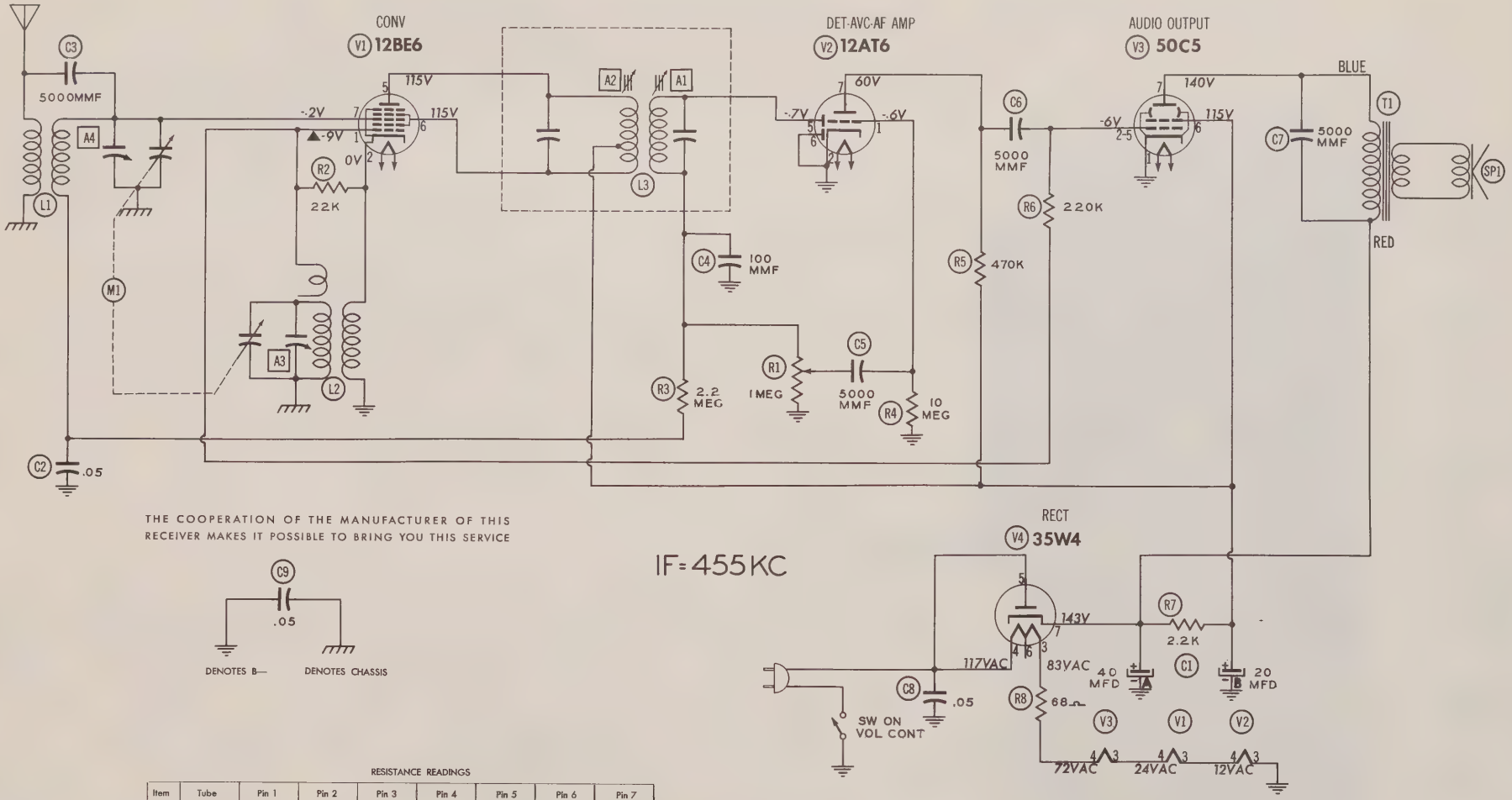
ITEM No.	PART NAME	CORONADO PART No.	NOTES
M1	Tuning Capacitor	VCT-72	28-442MMF, 27-190MMF
	Cabinet	P2201	
	Back	P1708	
	Knob	15B313R	Tuning
	Knob	P-1704-B	Off/On Volume

CHASSIS—BOTTOM VIEW



CORONADO
MODEL 35RA33-43-8125

CORONADO
MODEL 35RA33-43-8125



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.6Ω	12Ω	24Ω	†2.2KΩ	†2.2KΩ	3.2Meg
V 2	12AV6	10Meg	0Ω	0Ω	12Ω	1 Meg	0Ω	†470KΩ
V 3	50C5	0Ω	240KΩ	24Ω	75Ω	240KΩ	†2.2KΩ	†155Ω
V 4	35W4	INF	INF	145Ω	180Ω	180Ω	175Ω	150KΩ

▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN7 OF V4

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

L. F. [illegible]
DENVER, [illegible]

GRANCO
MODEL CTU (UHF Conv.)

GRANCO
MODEL CTU (UHF Conv.)

TRADE NAME	Granco Model CTU
MANUFACTURER	Granco Products Inc., 36-17 20th. Ave., Long Island City 5, N.Y.
TYPE SET	AC Operated UHF Converter
TUBES (Three)	Types 6AF4 UHF Osc., 6BQ7A IF Amp., 6X4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING .15 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	470-890MC

THIS CONVERTER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT SHOULD NOT BE REQUIRED IN THE FIELD.

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PARTS LIST AND DESCRIPTIONS

GRANCO MODEL CTU

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		GRANCO PART No.	STANDARD REPLACEMENT		
V1	UHF Oscillator	6AF4	6AF4	7DK	
V2	IF Amplifier	6BQ7A	6BA7A	9AJ	
V3	Rectifier	6X4	6X4	5BS	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	GRANCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	20	300		PRS450/20-20		EDL2245		TCD65	TVA-2730	Red Blue
B	20	300								
C2	470			BPD-00047	DD-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C3	100			BPD-0001	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C4	470			BPD-00047	DD-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C5	470			BPD-00047	DD-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C6	470			BPD-00047	DD-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C7	650									
C8	650									

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	GRANCO PART No.	IRC PART No.	
R1	27Ω	1/2			
R2	100Ω	1/2		BTS-100	
R3	1 Meg	1/2		BTS-1 Meg	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	GRANCO PART No.	IRC PART No.	
R4	1000Ω	1/2		BTS-1000	
R5	8200Ω	2		BTB-8200	
R6	1000Ω	1		BTA-1000	

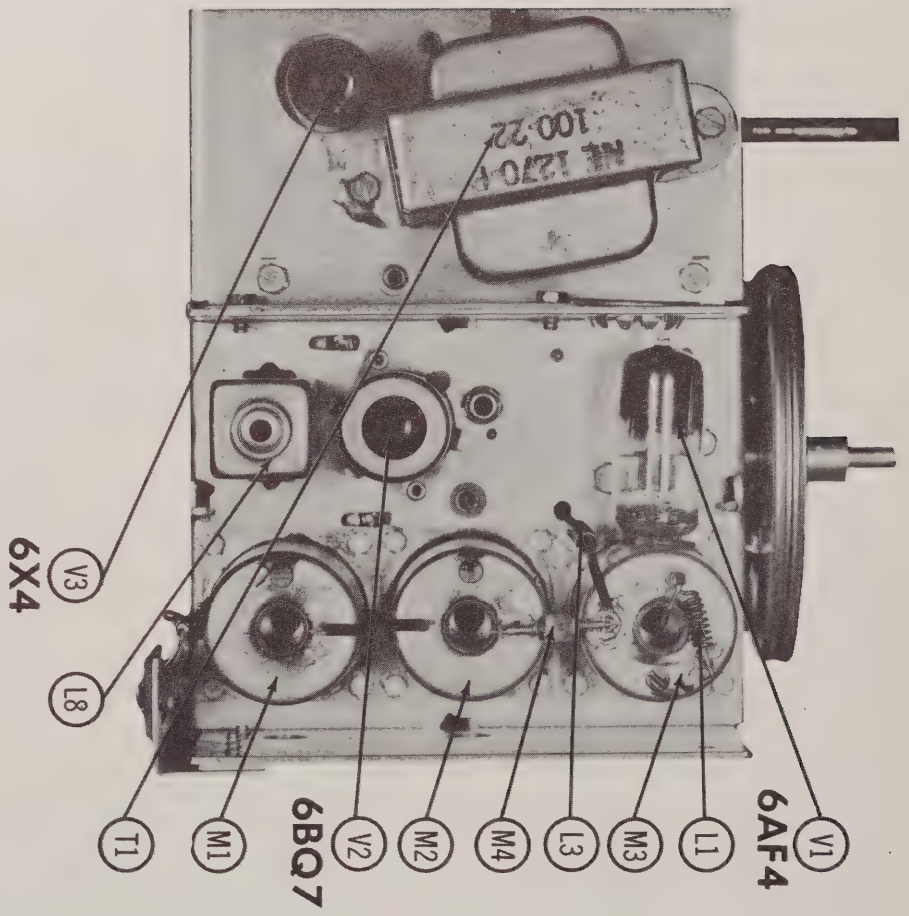
TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	GRANCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ .15A	240V .015ADC	6.3VAC @ 1.22A						

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	GRANCO PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Fil. Choke	0Ω						
L2	Fil. Choke	0Ω						
L3	IF Coupling	0Ω						
L4	IF Input Tuning	0Ω						
L5	IF Input Coil	0Ω						
L6	RF Choke	.2Ω						
L7	Neutr. Coil	.2Ω						
L8	IF Output Tuning	0Ω	0Ω					

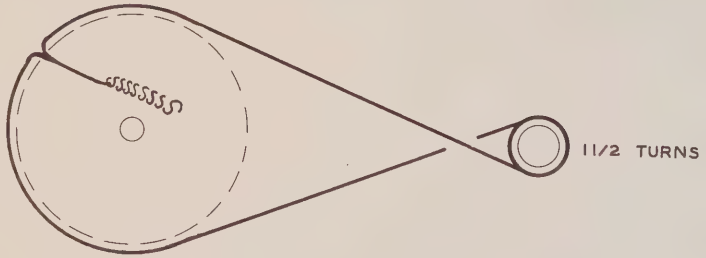
CHASSIS—TOP VIEW



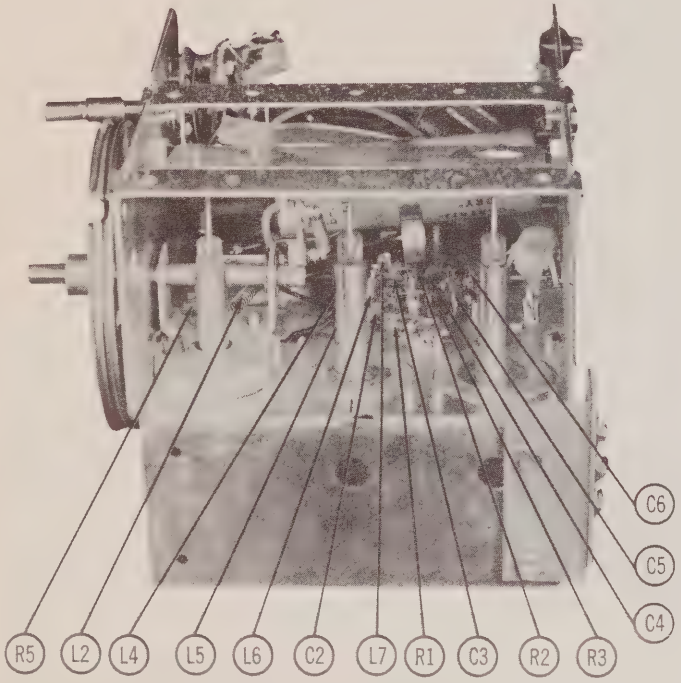
PARTS LIST AND DESCRIPTIONS (Continued)

MISCELLANEOUS

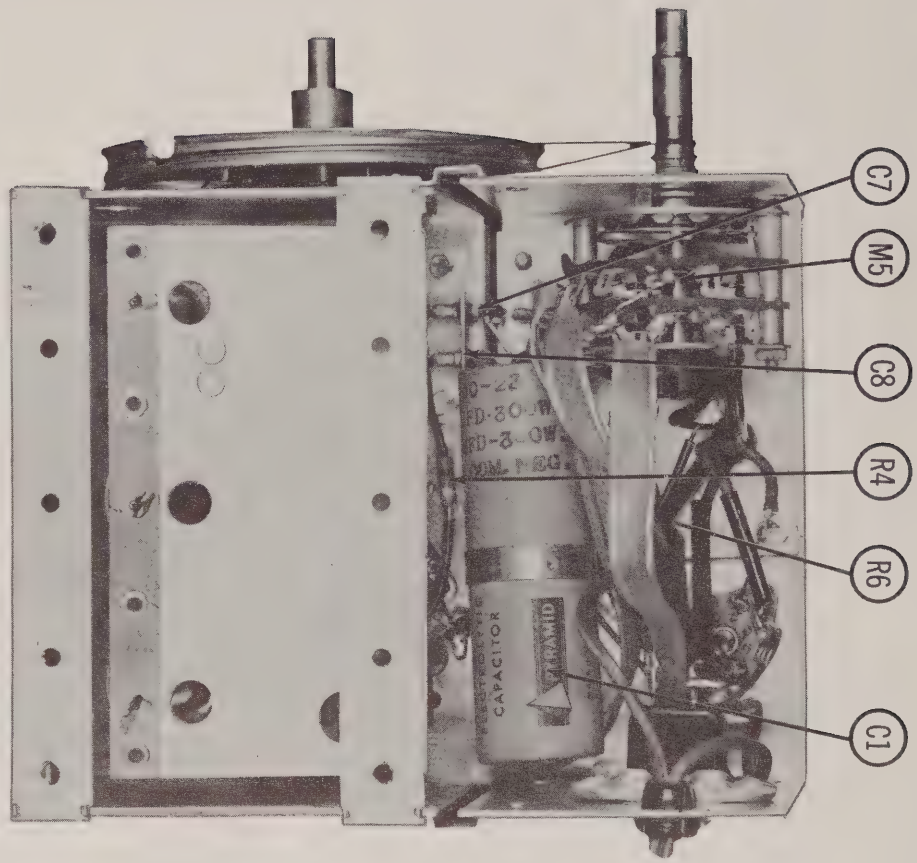
ITEM No.	PART NAME	GRANCO PART No.	NOTES
M1	Tuning Assembly		Antenna
M2	Tuning Assembly		Mixer
M3	Tuning Assembly		Oscillator
M4	Crystal Diode		Mixer 1N82
M5	Switch		Off-VHF-UHF Selector



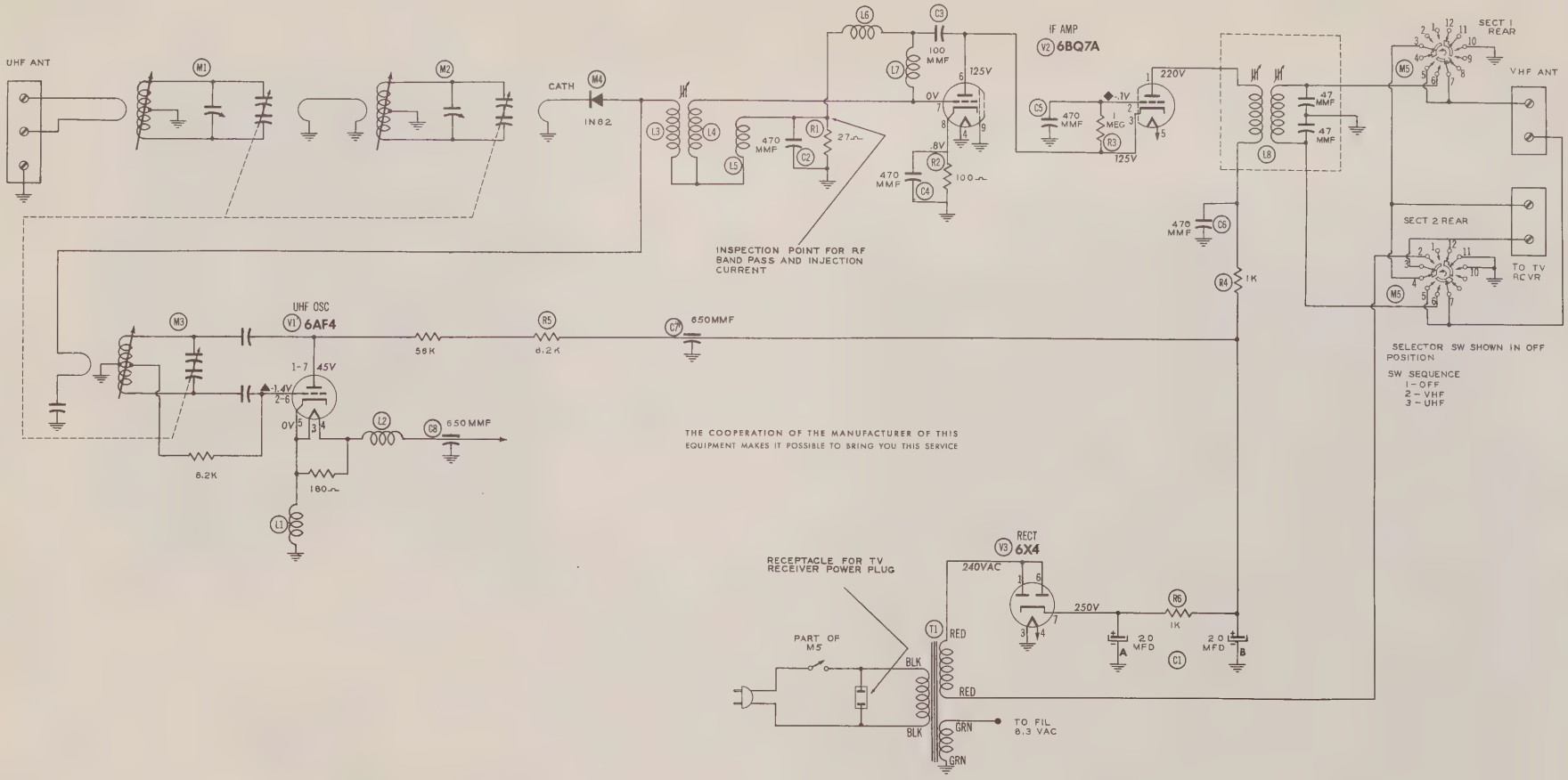
DIAL CORD DRIVE



CHASSIS—BOTTOM VIEW



GRANCO MODEL CTU



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AF4	†65KΩ	8.2KΩ	0Ω	.1Ω	0Ω	8.2KΩ	65KΩ		
V 2	6BQ7A	†2KΩ	INF	INF	0Ω	.1Ω	INF	27Ω	100Ω	0Ω
V 3	6X4	480Ω	INF	0Ω	.1Ω	INF	480Ω	75KΩ		

ALL MEASUREMENTS IN UHF POSITION
† MEASURED FROM PIN 7 OF V3.
▲ TAKEN WITH VACUUM TUBE VOLTMETER
♦ MEASURED FROM PIN 3 OF V2.

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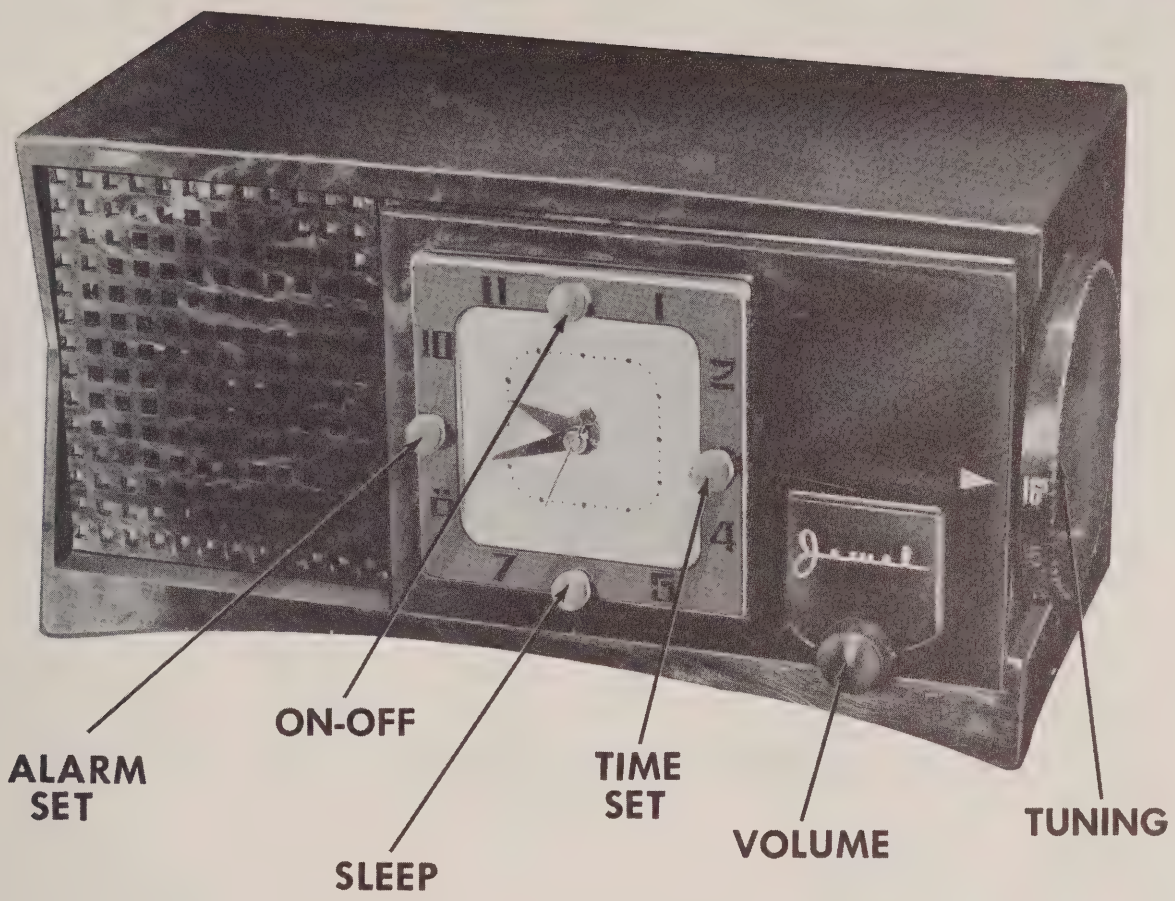
1 - DC Voltage measurements are at 20,000 ohms per volt, AC voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.

JEWEL
MODEL 5125U



JEWEL
MODEL 5125U

TRADE NAME	Jewel Model 5125U
MANUFACTURER	Jewel Radio Corp., 900 Passiac Ave., East Newark, N.J.
TYPE SET	AC Operated AM Superheterodyne Receiver with Electric Clock
TUBES (Five)	Types 12BE6 Conv., 12BA6 IF Amp., 12AV6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycles — RATING .24 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Direct	High side to external antenna terminal. Low side to B-.	455KC (400~Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	"	"	1620KC	"	"	A5	"
3.	"	"	1400KC	Tune to 1400KC signal	"	A6	"

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PARTS LIST AND DESCRIPTIONS

JEWEL MODEL 5125U

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		JEWEL PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3A	Det-AVC-AF Amp.	12AV6	12AV6	7BT	
B	Det-AVC-AF Amp.	12AT6	12AT6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	JEWEL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	30	150	31-41	PRS150/80-40		EDL8415		TC492 TC47	TVA-2460	Red Blue
C2	.05	400	32-5	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C3A	220		♦ 36-5		♦PC150		♦1408-01		♦103C4	
B	.002									
C	250									
D										
E	.005									
C4	.01	600	32-29	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C5	.05	400	32-5	489ZX-05		PJ4S5		PT415	4TM-S5	
C6	.1	600	32-30	P688-1		PTE6P1		PT601	6TM-P1	

♦ Items C3A, C3B, C3C, C3D, C3E, R5A, R5B, R5C are combined in one unit. When replacing items separately C3C and C3D should total 250MMF.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	JEWEL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	½	50-42	Q11-133	AG-60-S	BSK-60-S	U-48	Volume
B	Shaft		Not Req.	Not Req.	KNS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	JEWEL PART No.	IRC PART No.	
R2	22KΩ	½	20-223-31	BTS-22K	
R3	150Ω	½	20-151-31	BTS-150	
R4	3.3Meg	½	20-335-31	BTS-3.3Meg	
R5A	6.8Meg	½	♦ 36-5	BTS-6.8Meg	
B	470KΩ	½		BTS-470K	
C	470KΩ	½		BTS-470K	

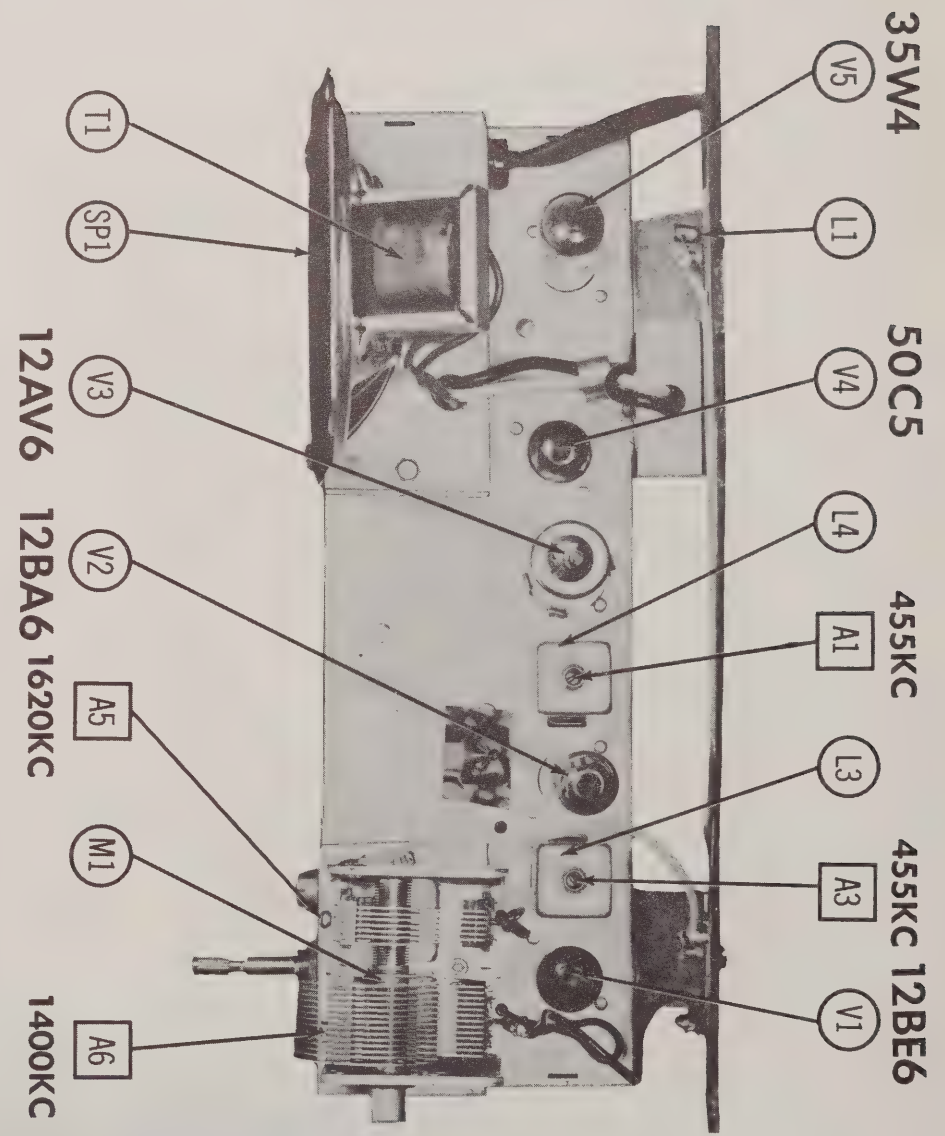
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	JEWEL PART No.	IRC PART No.	
R6	150Ω	½	20-151-31	BTS-150	
R7	1500Ω	1	20-152-41	BTA-1500	
R8	22Ω	½	20-220-31		

♦ Items R5A, R5B, R5C, C3A, C3B, C3C, C3D, C3E are combined in one unit.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		JEWEL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.4KΩ	3.5Ω	208Ω	.53Ω	61-11	A-3332	A-3025	RO-302 ①	S-1X ①	① Drill one new mtg. hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	JEWEL PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.5Ω	80-36	ST-113 Mod. P4-X	4A07	

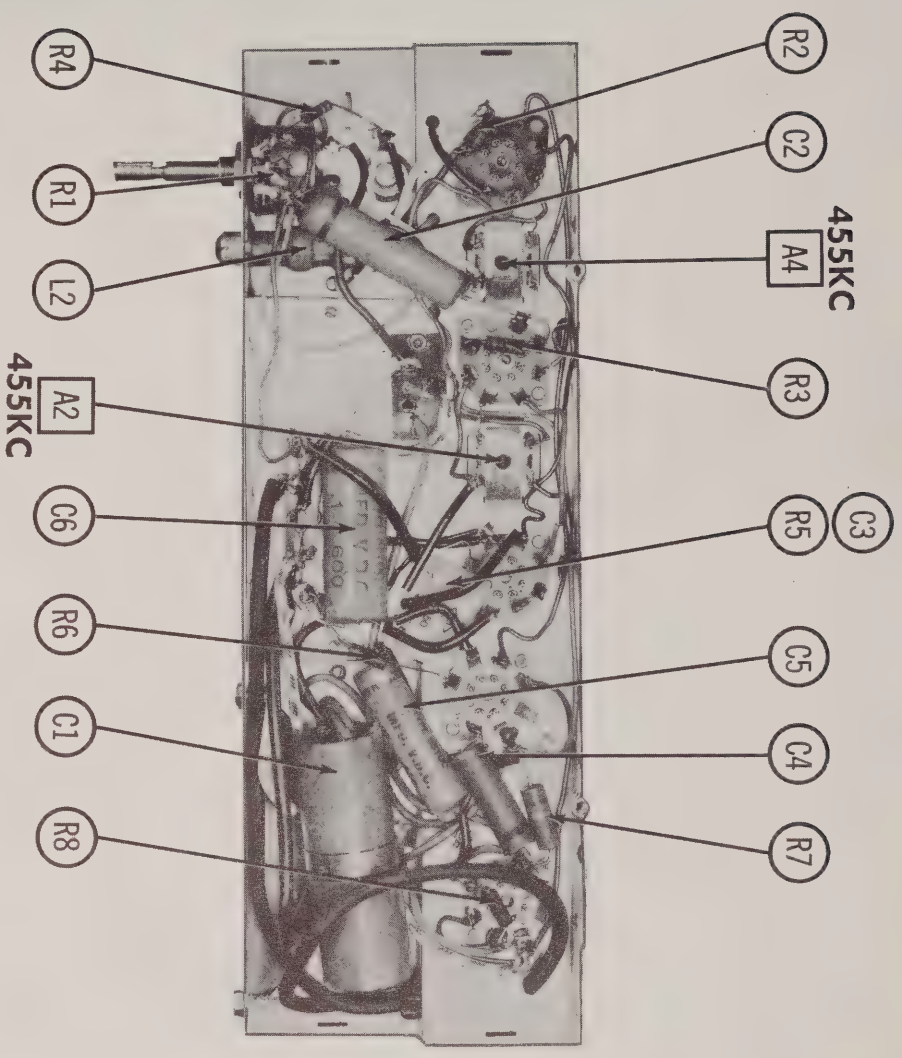
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	JEWEL PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Ant.	0Ω	3.5Ω	125-58				Includes cabinet back
L2	Osc. Coil	1.5Ω	11Ω	60-31			69-Osc.	
L3	Input IF	15Ω	15Ω	61-11	16-6758	BC-352	12-C1	
L4	Output IF	15Ω	15Ω	61-11	16-6758	BC-353	12-C2	

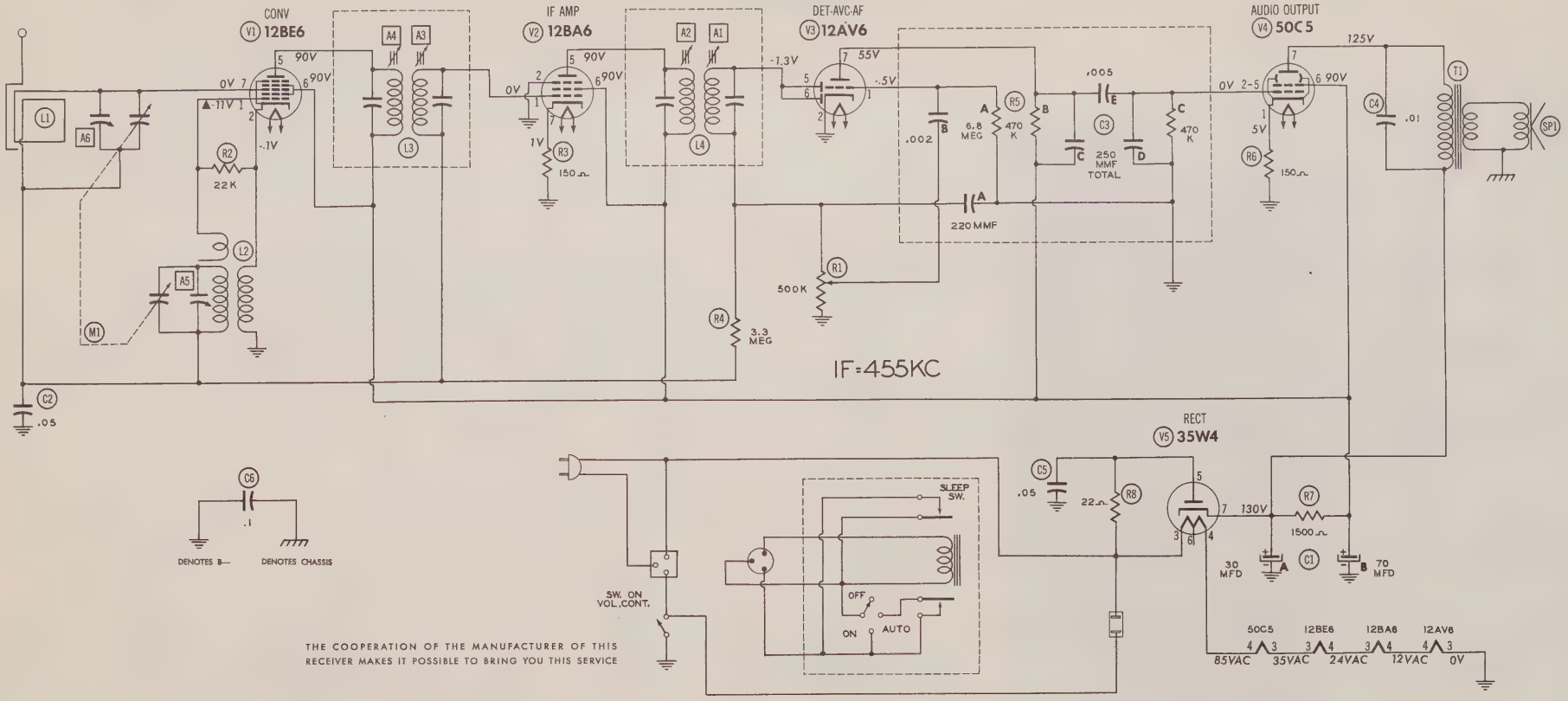
MISCELLANEOUS

ITEM No.	PART NAME	JEWEL PART No.	NOTES
M1	Tuning Cap.	30-48	47-462MMF, 13-120MMF
	Clock	140-20	
	Cabinet	120-94	State color
	Knob	122-69	Volume
	Knob	122-65	Tuning

CHASSIS—BOTTOM VIEW



JEWEL MODEL 5125U



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	1.5Ω	36Ω	24Ω	†1.5KΩ	†1.5KΩ	3.8Meg
V 2	12BA6	3.8Meg	0Ω	24Ω	12Ω	†1.5KΩ	†1.5KΩ	150Ω
V 3	12AV6	6.8Meg	0Ω	0Ω	12Ω	500KΩ	500KΩ	†470KΩ
V 4	50C5	150Ω	470KΩ	36Ω	85Ω	470KΩ	†1.5KΩ	†208Ω
V 5	35W4	INF	120Ω	120Ω	85Ω	142Ω	114Ω	90KΩ

▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 7 OF V5

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217-7

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

KAYE-HALBERT
CHASSIS MODEL 263

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CHASSIS MODEL 263

CHASSIS MODEL 263

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DATE 10–53 SET 217 FOLDER 8

PHOTOFACT* Folder
*TRADE MARK

KAYE-HALBERT
CHASSIS MODEL 263

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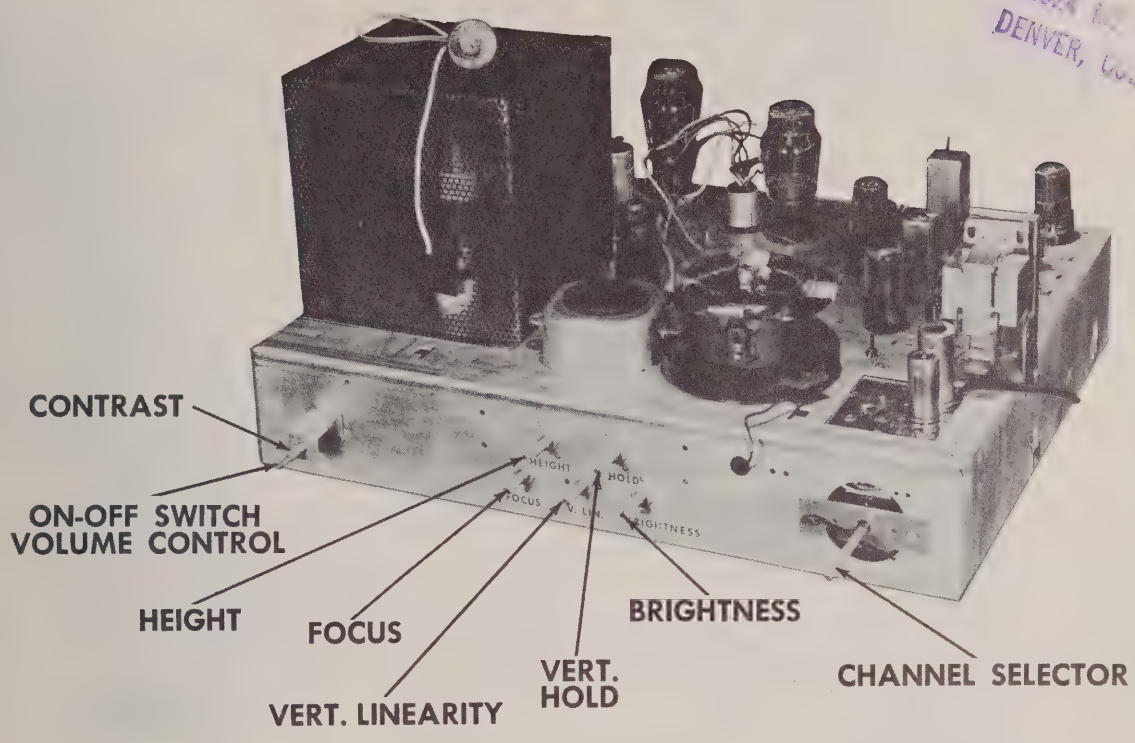
3924
DENVER, CO



KAYE-HALBERT
CHASSIS MODEL 263

TRADE NAME	Kaye Halbert Chassis Model 263
MANUFACTURER	Kaye Halbert Corp., 3555 Hayden Avenue, Culver City, Calif.
TYPE SET	Television Receiver
TUBES	Twenty-Five
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 2.4 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13, Video IF 25 MC, Sound IF 20.5 MC (Intercarrier)

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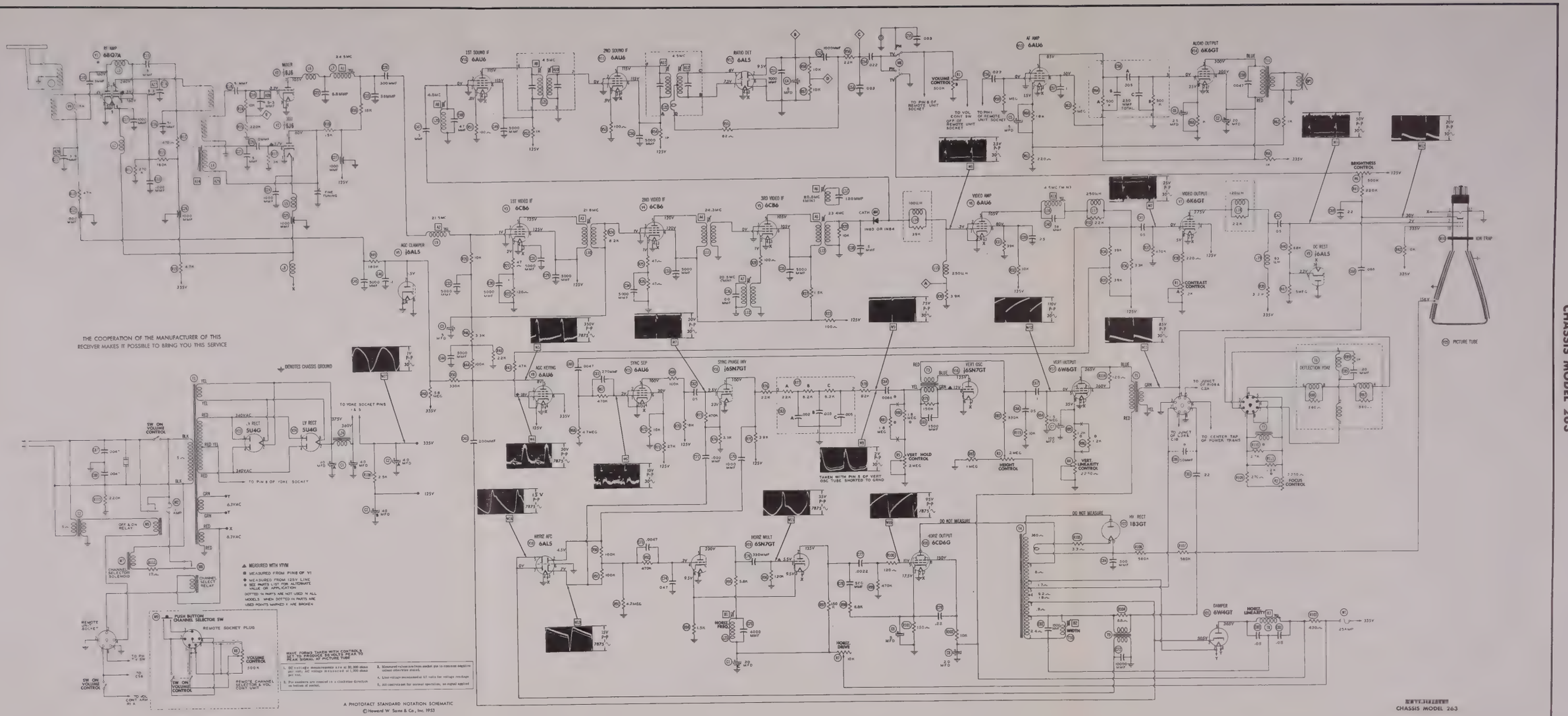
KAYE-HALBERT
CHASSIS MODEL 263
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
RF AMP 6BQ7A
1ST SOUND IF 6AU6
2ND SOUND IF 6AU6
RATIO DET 6AL5
AF AMP 6AU6
AUDIO OUTPUT 6K6GT
1ST VIDEO IF 6CB6
2ND VIDEO IF 6CB6
3RD VIDEO IF 6CB6
VIDEO AMP 6AU6
VIDEO OUTPUT 6K6GT
AGC CLAMPER 6AL5
AGC KEYING 6AU6
SYNC SEP 6AU6
SYNC PHASE INV 6SN7GT
VERT OSC 6SN7GT
VERT OUTPUT 6W6GT
DC REST 6AL5
HORIZ AFC 6AL5
HORIZ MULT 6SN7GT
HORIZ OUTPUT 6CD6G
HV RECT 1B3GT
DAMPER 6W4GT
PICTURE TUBE
ION TRAP
DEFLECTION YOKE
BRIGHTNESS CONTROL
CONTRAST CONTROL
FOCUS CONTROL
VERT HOLD CONTROL
VERT LINEARITY CONTROL
HEIGHT CONTROL
HORIZ LINEARITY
HORIZ DRIVE
HORIZ FREQ
WIDTH
VOLUME CONTROL
SW ON VOLUME CONTROL
CHANNEL SELECTOR SOLENOID
CHANNEL SELECT RELAY
REMOTE SOCKET PLUG
PUSH BUTTON CHANNEL SELECTOR SW
REMOTE CHANNEL SELECTOR & VOL CONT UNIT
TO YOKE SOCKET PINS
TO PIN 8 OF TUNE SOCKET
TO VOL CONT SW OF REMOTE UNIT SOCKET
TO PIN 1 OF REMOTE UNIT SOCKET
TO JUNCT OF R108 & C34
TO CENTER TAP OF POWER TRANS
TAKEN WITH PIN 5 OF VERT OSC TUBE SHORTED TO GRND
DO NOT MEASURE
DENOTES CHASSIS GROUND
340VAC
375V
360V
335V
125V
6.3VAC
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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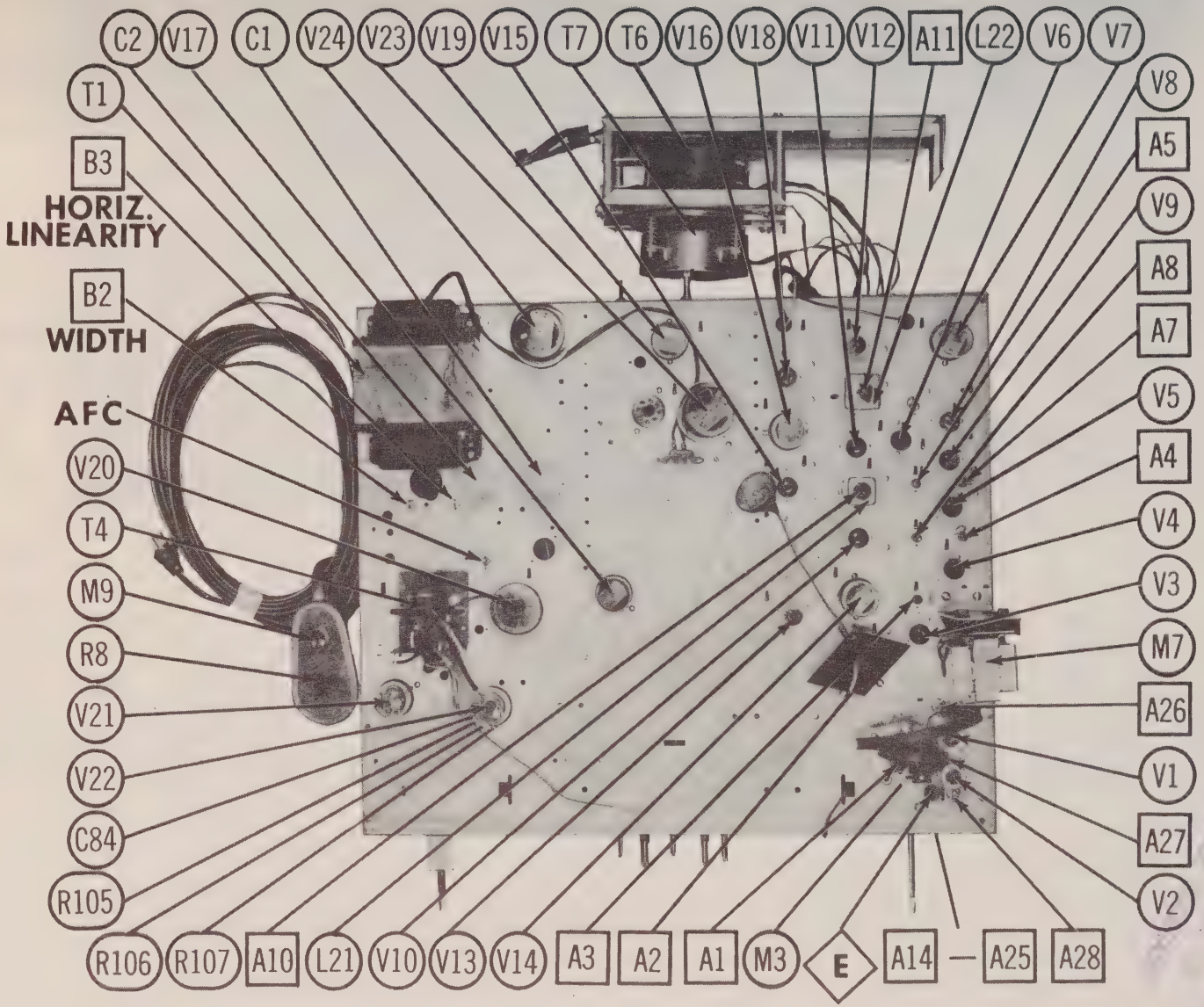
KAYE-HALBERT
CHASSIS MODEL 263



CHASSIS TOP VIEW

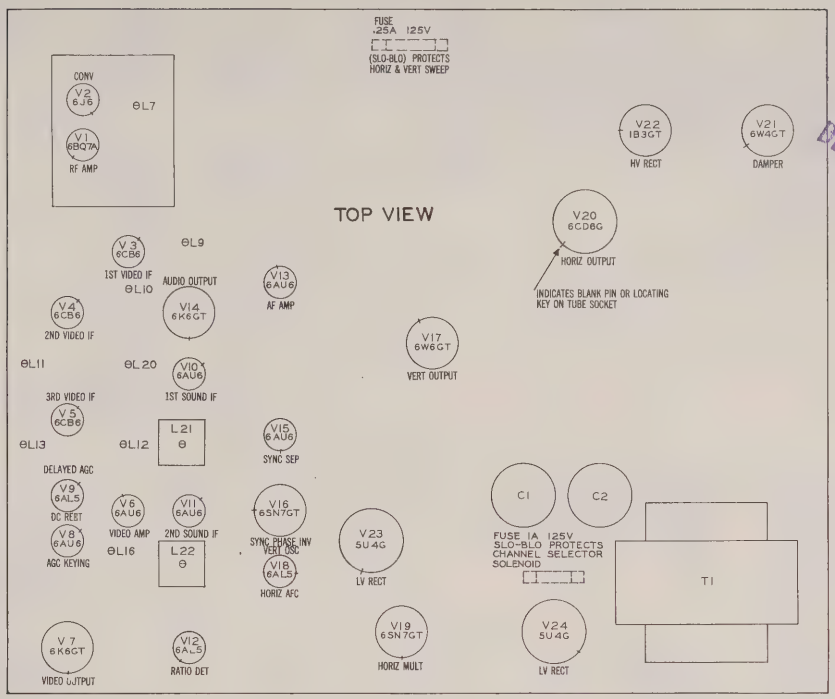
CHASSIS MODEL 263

KAYE-HALBERT

KAYE-HALBERT
CHASSIS MODEL 263

CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

TUBE PLACEMENT CHART



PROPERTY OF
L. F. BLANK
3924 M
DENVER, COLO

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - **V23, V24**

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - **V2, V3, V4, V5.**
No pic, no sound, has snow - **V1, V2, V3.**
No pic, has sound, has raster - **V6, V7, V25.**
Has pic, no sound - **V10, V11, V12, V13, V14.**
Overloaded picture - **V8, V9.**

SYNC FAILURE
No vert. sync - **V16, V17.**
No horiz. sync - **V16, V18, V19.**
No vert. or horiz. sync - **V15, V16.**

SWEEP FAILURE
No raster, has sound - **V19, V20, V21, V22, V25, Fuse (M1).**
No vertical deflection - **V16, V17.**
Poor vert. linearity or foldover - **V16, V17.**
Poor horiz. linearity or foldover - **V19, V20, V21.**
Narrow picture - **V19, V20, V21, V22, V23, V24.**
Vert. off freq. - **V16, V17.**
Horiz. off freq. - **V16, V18, V19.**

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) from its socket and replace with a 6J6, which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 4.5V battery to the ungrounded side of C3 and the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	24.5MC	Any	DC probe to point (A). Common to chassis.	A1	Adjust for maximum deflection.
2.	"	"	21.5MC	"	"	A2	"
3.	"	"	21.8MC	"	"	A3	"
4.	"	"	24.3MC	"	"	A4	"
5.	"	"	23.4MC	"	"	A5	"
6.	"	"	20.5MC	"	"	A6, A7	Detune A7 by touching windings with finger while adjusting A6 for MINIMUM deflection. Adjust A7 for MINIMUM deflection detuning A6 with finger if necessary.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	24MC (10MC Swp)	20.5MC 21.4MC 25.0MC	Any	Vert. Amp. to point (A). Low side to chassis.		Check for response curve similar to Fig. 1. If necessary retouch A1 thru A5 for proper response. If A5 is changed recheck A6.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.001MFD	High side to point (A). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to point (B). Common to chassis.	A8, A9, A10, A11	Adjust for maximum deflection.
9.	"	"	"	"	DC probe to point (C). Common to point (D).	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	.001MFD	High side to point (A). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point (B). Low side to chassis.	A8, A9, A10, A11	Disconnect stabilizer capacitor C4. Adjust for maximum amplitude and symmetry as in Fig. 2.
9.	"	"	"	"	"	Vert. Amp. to point (C). Low side to chassis.	A12	Reconnect capacitor C4. Adjust A12 so that 4.5MC occurs at center of crossover lines as in Fig. 3. SLIGHTLY retouch A-11 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	.001MFD	High side to point (A). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe thru detector (Fig. 4) to pin 2 (grid) of picture tube. Common to chassis.	A13	Adjust for MINIMUM deflection.

OSCILLATOR ALIGNMENT

Remove dummy converter tube and replace original 6J6 in socket.
The channel oscillator adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is tuned to each channel.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. to point (A). Low side to chassis.	A14	Adjust to place sound marker as shown in Fig. 5. The video marker should be at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A15	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A16	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A17	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A18	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A19	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A20	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A21	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A22	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A23	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A24	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A25	

ALIGNMENT INSTRUCTIONS (cont)

RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 299.75MC	12	Vert. Amp. thru 10KΩ to point (E). Low side to chassis.	A26, A27, A28	Adjust for response curve similar to Fig.6 with markers above 90%.
13.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

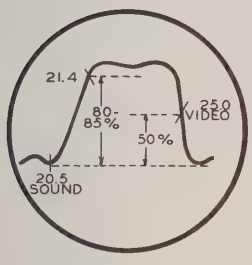


FIG.1

FIG. 2

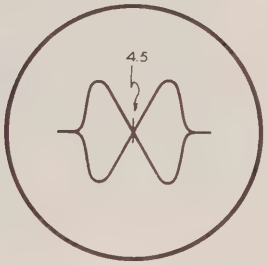


FIG. 3

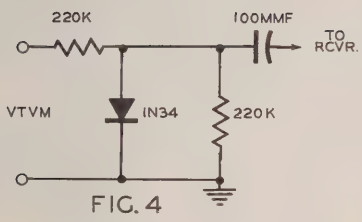


FIG. 4

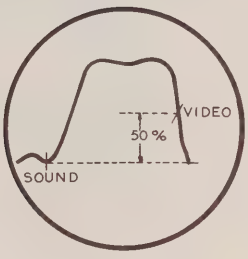


FIG. 5

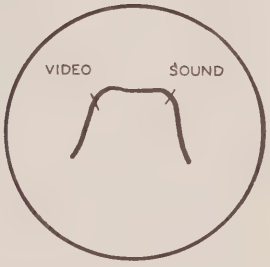
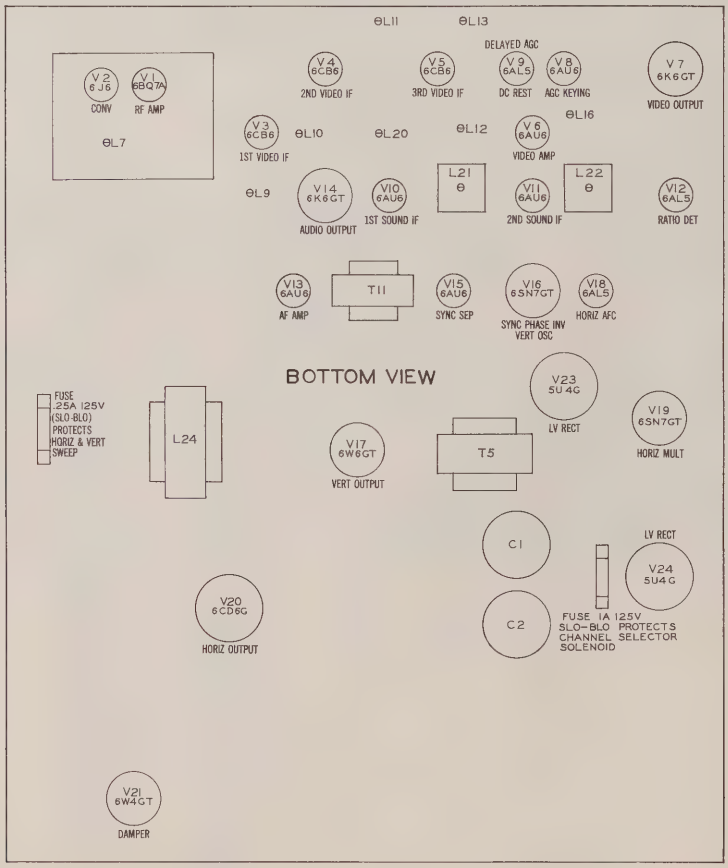


FIG. 6

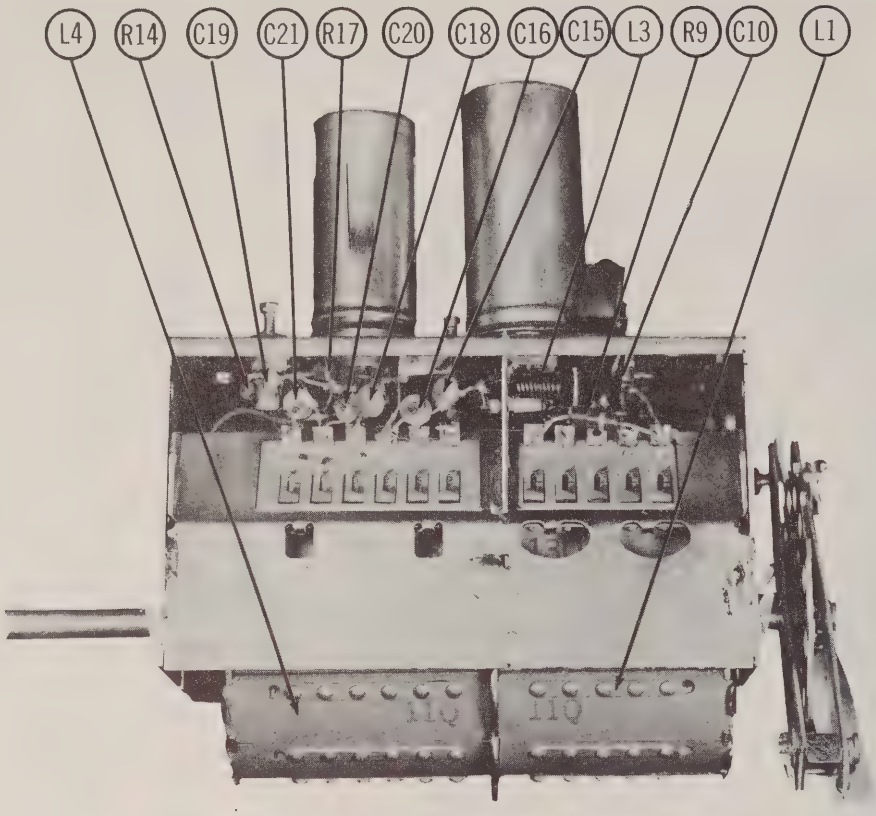
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BQ7A	INF	630KΩ	0Ω	.1Ω	0Ω	†1KΩ	†110KΩ	INF	0Ω
V 2	6J6	†18KΩ	†18KΩ	.1Ω	0Ω	230KΩ	10KΩ	0Ω		
V 3	6CB6	35KΩ	167Ω	.1Ω	0Ω	†3KΩ	†3KΩ	0Ω		
V 4	6CB6	25KΩ	94Ω	.1Ω	0Ω	†3.1KΩ	†3.1KΩ	0Ω		
V 5	6CB6	.3Ω	100Ω	.1Ω	0Ω	†4.6KΩ	†4.6KΩ	0Ω		
V 6	6AU6	3.9KΩ	0Ω	.1Ω	0Ω	†6KΩ	†10KΩ	0Ω		
V 7	6K6GT	INF	0Ω	†3.8KΩ	†3KΩ	470KΩ	130Ω	.1Ω	350Ω	
V 8	6AU6	†53KΩ	†3KΩ	0Ω	.1Ω	120KΩ	†550Ω	†3KΩ		
V 9	6AL5	0Ω	0Ω	.1Ω	0Ω	1.5Meg	0Ω	410 KΩ		
V 10	6AU6	2.1Ω	0Ω	.1Ω	0Ω	†4.1KΩ	†4.1KΩ	100Ω		
V 11	6AU6	2.1Ω	0Ω	0Ω	.1Ω	†4.1KΩ	†4.1KΩ	100Ω		
V 12	6AL5	0Ω	20KΩ	.1Ω	0Ω	INF	0Ω	INF		
V 13	6AU6	1Meg	0Ω	0Ω	.1Ω	†500KΩ	†1Meg	2KΩ		
V 14	6K6GT	0Ω	0Ω	†2.1KΩ	†1.5KΩ	500KΩ	†5.2KΩ	.1Ω	1KΩ	
V 15	6AU6	5.2Meg	0Ω	0Ω	.1Ω	†120KΩ	†14KΩ	0Ω		
V 16	6SN7GT	470KΩ	†6.9KΩ	3.3KΩ	2Meg	†800KΩ	0Ω	.1Ω	0Ω	
V 17	6W6GT	INF	0Ω	†1.2KΩ	†1.3KΩ	1.5Meg	INF	.1Ω	1.2KΩ	
V 18	6AL5	4.8Meg	4.8Meg	.1Ω	0Ω	8.7Ω	0Ω	8.7Ω		
V 19	6SN7GT	120KΩ	†160KΩ	1.5KΩ	5.2Meg	†15.5KΩ	1.5KΩ	.1Ω	0Ω	
V 20	6CD6G	470KΩ	0Ω	150Ω	INF	470KΩ	INF	.1Ω	†11KΩ	TOP CAP 20.7Ω
V 21	6W4GT	INF	INF	INF	INF	†990Ω	INF	■12.7Ω	■12.7Ω	
V 22	1B3GT	PINS	1 - 8	HAVE	INFINITE	RESISTANCE				TOP CAP 380Ω
V 23	5U4G	INF	18KΩ	INF	20Ω	INF	21Ω	INF	18KΩ	
V 24	5U4G	INF	18KΩ	INF	20Ω	INF	21Ω	220KΩ	18KΩ	
V 25	27"	.1Ω	1.5Meg	Pin 10 10.5KΩ	Pin 11 300KΩ	Pin 12 0Ω				

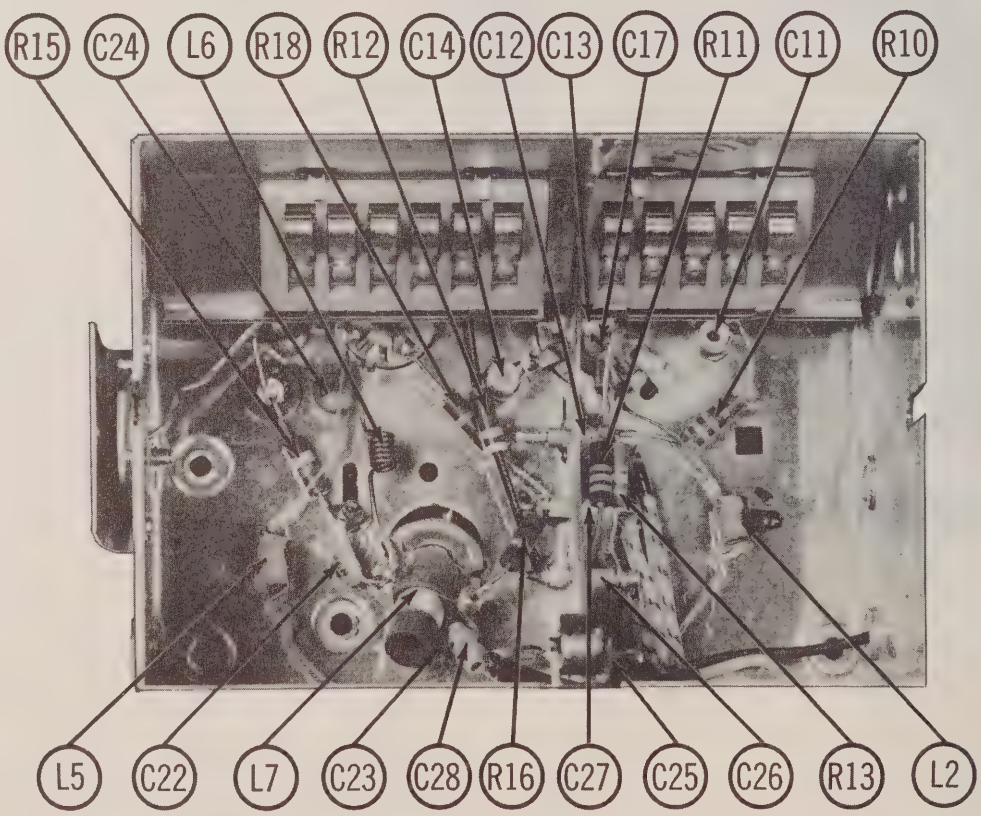
† MEASURED FROM PIN 2 OF V24.
■ MEASURED FROM PIN 3 OF V21.



TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW

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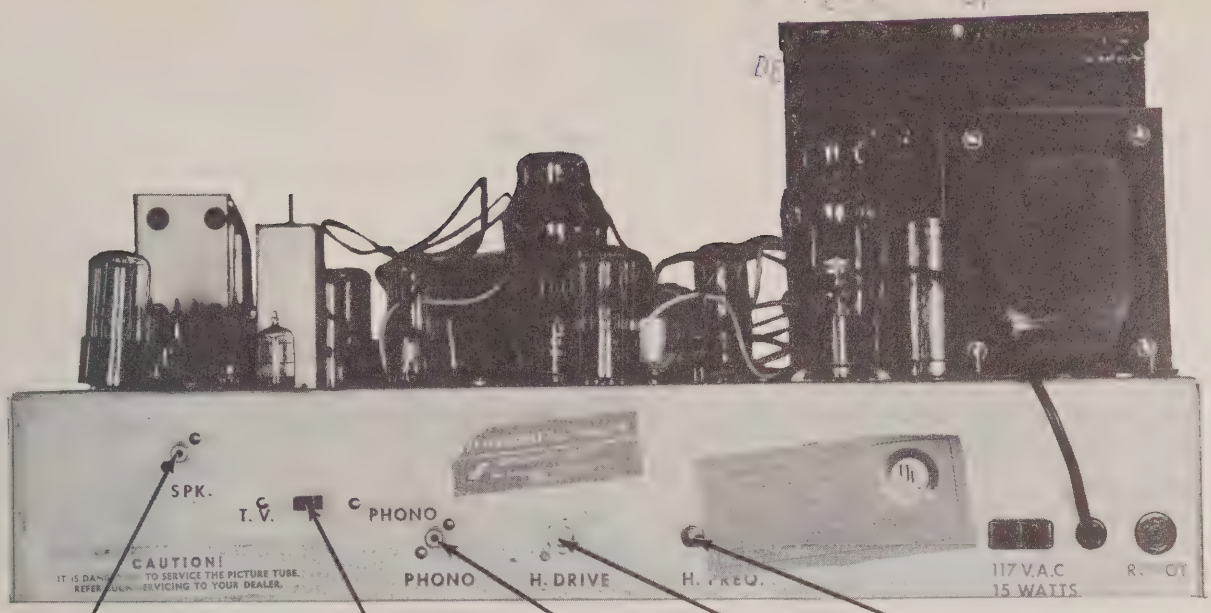


SPKR. JACK

TV-PHONO SELECTOR SWITCH

PHONO INPUT JACK

HORIZ. DRIVE

B1
HORIZ. FREQ.

CHASSIS—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

Adjust the width slug (B2) for a picture slightly wider than necessary to fill the mask horizontally.

Adjust the horizontal linearity slug for a picture that is symmetrical from left to right.

Turn the horizontal drive control clockwise as far as possible without the presence of vertical white lines or compression in the center of the picture.

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL

LOSS OF SWEEP

See "Loss of High Voltage".

INSUFFICIENT SWEEP

Check by substitution V19, V20, V21, V23 and V24. Check adjustment of horizontal linearity (B3) and width (B2). Check waveform at W16.

If Satisfactory	If Unsatisfactory
Check C80, C81, C82, C83, C79, C8, R102, R104, T4, T6A, T8, T10 and other associated components.	Check C76, C77, C78 and other components associated with V19 and V20.

DRIVE LINES

Check by substitution V19, V20 and V21. Check setting of horizontal drive control. Check R97, R98 for change of value. Check C77 and C78. Check components associated with the damper network, especially C80 and C81.

COMPRESSED LEFT SIDE

Check by substitution V19, V20 and V21. Check adjustment of horizontal drive control , horizontal linearity (B3) and width (B2). Check components associated with V19, V20 and V21 especially T4, T6A, T8 and T10.

FOLDS

Check by substitution V19, V20, and V21. Check setting of horizontal drive control. Check boost B+ filter components.

XMAS TREE EFFECT

Check by substitution V19. Check C75 and C76. Check L23 for shorted turns.

VERTICAL

LOSS OF SWEEP

Check by substitution V16 and V17. Check waveform W10.

If Unsatisfactory	If Satisfactory
Check R84, C67, T3 and other components associated with V16B.	Check R114, T5, T6B and other components associated with V17.

INSUFFICIENT SWEEP

Check by substitution V16 and V17. Check adjustment of vertical linearity and height controls. Proceed as outlined under "Loss of Sweep".

COMPRESSED AT BOTTOM

Check by substitution V16 and V17. If adjustment of height and vertical linearity controls do not correct this trouble check waveform at W10.

If Satisfactory	If Unsatisfactory
Check T5, T6B, C7, R114 and other associated components.	Check C67, R84, T3 and other associated components.

COMPRESSED AT TOP

Check by substitution V16 and V17. Check adjustment of height and vertical linearity controls. Check components associated with V16B and V17.

FOLDS

Check V16 and V17 by substitution. Check components associated with these stages.

SYNC

HORIZONTAL

LOSS OF SYNC

Check by substitution V18 and V19. Check waveform W14.

If Satisfactory	If Unsatisfactory
Check C70, C71, C73, C74 and other associated components.	Check C72 and T9.

CRITICAL HOLD

Check by substitution V18 and V19. Proceed as outlined under "Loss of Sync ".

PULLING PICTURE

Check by substitution V15, V16, V18, V19 and V20. Check components associated with these stages. Check video IF and amplifier stages for heater to cathode leakage. Check AGC network and components.

VERTICAL

LOSS OF SYNC

Check by substitution V15 and V16. Check components associated with these stages especially the vertical integrator network, T3, C62 and C64.

CRITICAL HOLD

Check by substitution V15 and V16. Check signal at W6 for signal overload and/or sync compression.

If Satisfactory	If Unsatisfactory
Check components associated with V15 and V16.	Check AGC network for faulty components. Check video IF and amplifier components.

TRIGGERING

Substitute V15, V16 and V17. Check circuit near these stages for filament lead dressed too near grid leads.

VIDEO

LOSS OF VIDEO

Check by substitution V6 and V7. Check components associated with these stages especially all coupling and bypass capacitors. Check picture tube.

SOUND BARS

Check alignment of local oscillator. Check alignment of sound take off trap (A8) and 4.5MC trap (A13).

POOR RESOLUTION

Check V1, V2, V3, V4, V5, V6, V7 and V9 by substitution. Check components associated with these stages especially all bypass capacitors.

POOR CONTRAST

Check by substitution V6, V7, V8 and V9. Check associated components especially C41 and C42. Check picture tube.

NEGATIVE PICTURE

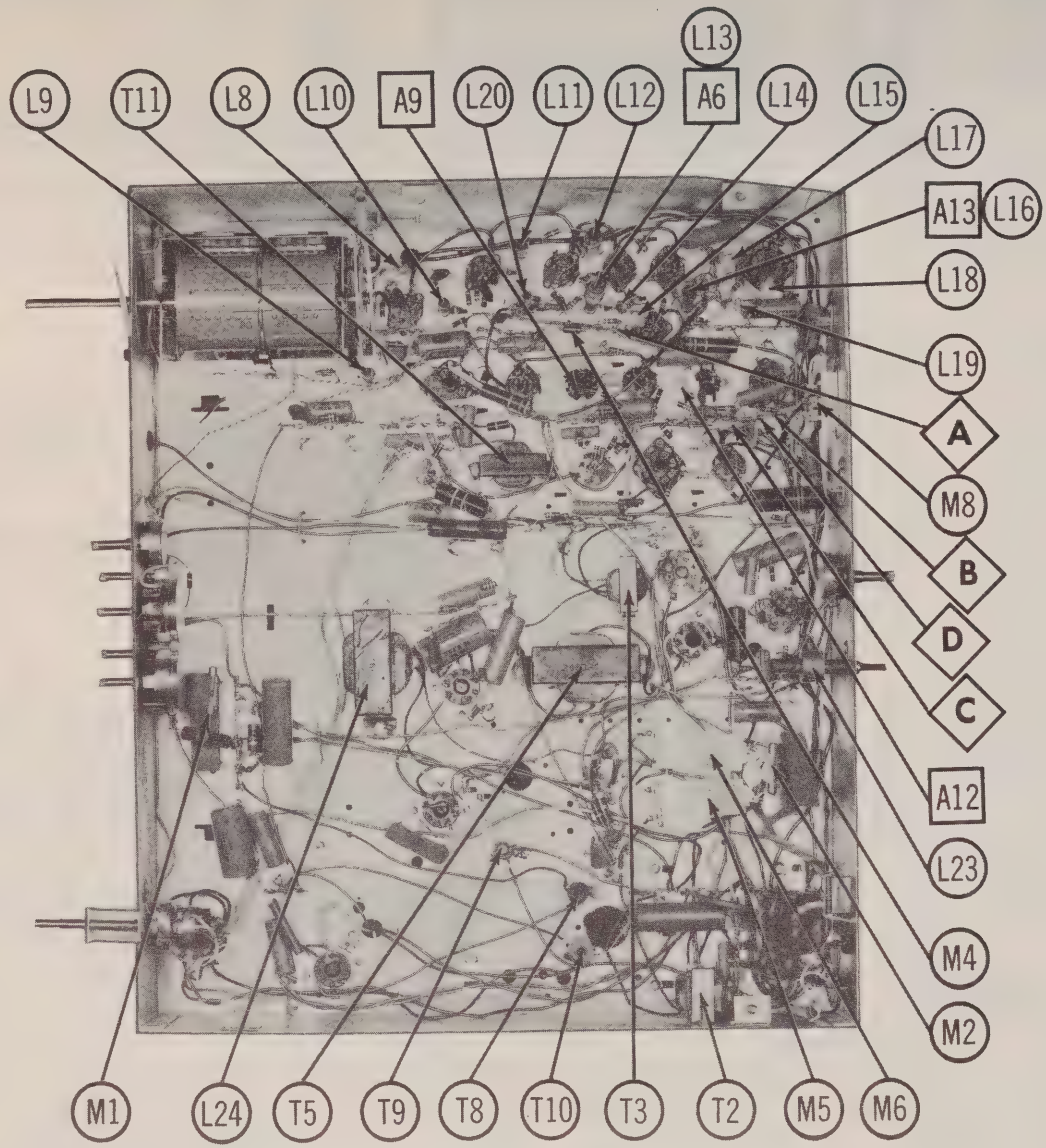
Check by substitution V6, V7, V8 and V9. Check associated circuit components.

SMEAR

Check by substitution V6, V7 and V9. Check C39, C41 and C42 for leakage. Check R37, R38, R39, R40, R34, R35, R36, R31 and R32 for change of value. Check L17 and L18 for open.

ONE BLACK BAR ACROSS PICTURE

Check tuner, video IF and video amplifier tubes for heater to cathode leakage.



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Kaye-Halbert PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1A	RF Amplifier	6BQ7A	6BQ7A	9AJ	
B	RF Amplifier	6BZ7	6BZ7	9AJ	
V2	Convrsion	6Z8	6Z8	7BF	
V3	1st. Video IF Amp.	5CB6	5CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	5CB6	7CM	
V5	3rd. Video IF Amp.	5CB6	5CB6	7CM	
V6	Video Amplifier	6AU8	6AU6	7BK	
V7	Video Output	6K8GT	5K6GT	7S	
V8	AGC Keying	6AU8	6AU6	7BK	
V9	AGC Clamper-Dc Resturcer	6AL5	6AL5	6BT	
V10	1st.Sound IF Amp.	6AU8	6AU6	7BK	
V11	2nd.Sound IF Amp.	6AU8	6AU6	7BK	
V12	Ratio Detector	6AL5	6AL5	6BT	
V13	AF Amplifier	6AU8	6AU6	7BK	
V14	Audio Output	6K8GT	6K8GT	7S	
V15	Sync Separator	6AU8	6AU6	7BK	
V16	Sync Phase Inv.-Vert. Oscillator	6SN7GT	6SN7GT	8BD	
V17	Vert. Output	5W6GT	5W6GT	7S	
V18	Horiz. AFC	6AL5	6AL5	6BT	
V19	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V20	Horiz. Output	6CD6G	6CD6G	5BT	
V21	Damper	5W4GT	6W4GT	4CG	
V22	HV Rectifier	1B3GT	1B3GT	3C	
V23	LV Rectifier	5U4G	5U4G	5T	
V24	LV Rectifier	5U4G	5U4G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Kaye-Halbert PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	±40	400		AFH4-79		BO45		FP447	TVL-3786	
B	±40	400				BR2045A				
C	±20	400								
C2A	±40	400		AFH4-79		BO45		FP447	TVL-3786	
B	±40	400				BR2045A				
C	±20	400								
C3	5	50		PRS150/4		BR550		TC30	TVA-1303	
C4	5	50		PRS150/4		BR550		TC30	TVA-1303	
C5	5	50		PRS150/4		BR550		TC30	TVA-1303	
C6	25	50		PRS50/33		BR255A		TC36	TVA-1306	
C7	100	50		PRS50/100		BRH50I		TC3501	TVA-1310	
C8	20	350		PRS450/20		BR2035A		TC66	TVA-1606	
C9	5	50		PRS150/4		BR550		TC30	TVA-1303	
C10	3			SI3NP0			NP0K-030		ZT-553	
C11	3-9				829-10					
C12	1000			CN-1-001		MFT-1000				503C-D1
C13	1000			CN-1-001		MFT-1000				503C-D1
C14	1.5-3				829-3					
C15	1.5			SI1.5NP0		TCZ-1.5		NP0K-1R5		ZT-5515	5TCCB-V15
C16	51			SI51		D6-500	TM5Q5	GP1K-510		UC-545	5GA-Q5
C17	1000			BPD-001		DD-102	TM5D1	801-001		DC-521	5HK-D1
C18	51			SI51		D6-500	TM5Q5	GP1K-510		UC-545	5GA-Q5
C19	1.5-3					829-3				CT565A	
C20	10			SI10NP0		TCZ-10		NP0K-100		ZT-561	5TCC-Q1
C21	5			SI5N750		TCN-5		N750K-050		NT-555	5TCUB-V5
C22	6.8			SI6.8NP0		TCZ-6.8		NP0K-6R8		ZT-5568	5TCCB-V68
C23	56			SI56		D6-560		GP1K-560		UC-5456	5GA-Q56
C24	1000			BPD-001		DD-102	TM5D1	801-001		DC-521	5HK-D1
C25	1000			CN-1-001		MFT-1000					503C-D1
C26	1000			CN-1-001		MFT-1000					503C-D1
C27	1000			CN-1-001		MFT-1000					503C-D1
C28	300			SI300		D6-301		GP2K-301		UC-533	5GA-T3
C29	5000			BPD-005		MD-502	TM5D5	811-005		DC-525	5HK-D5
C30	5000			BPD-005		MD-502	TM5D5	811-005		DC-525	5HK-D5
C31	5000			BPD-005		MD-502	TM5D5	811-005		DC-525	5HK-D5
C32	5000			BPD-005		MD-502	TM5D5	811-005		DC-525	5HK-D5
C33	5000			BPD-005		MD-502	TM5D5	811-005		DC-525	5HK-D5
C34	5000			BPD-005		MD-502	TM5D5	811-005		DC-525	5HK-D5
C35	5000			BPD-005		MD-502	TM5D5	811-005		DC-525	5HK-D5
C36	100	500		466-001			SR171		MCB235	MS-51	
C37	220	500									
C38	5			SI5		TCZ-4.7	5W5V5	GP1K-050		ZT-555	5GA-V5
C39	25	200		PS88-25			PJP25		PT403S	2TM-P25	
C40	56										
C41	.05	600		P688-05		DF-503	PTE635		PT615	6TM-S5	
C42	.05	600		P688-05		DF-503	PTE635		PT615	6TM-S5	
C43	200									30GA-T2	
C44	5000			BPD-005		MD-502	TM5D5	811-005		DC-525	5HK-D5
C45	5000			BPD-005		MD-502	TM5D5	811-005		DC-525	5HK-D5
C46	.1	200		P288-1		DF-104	PJP1		PT401	2TM-P1	
C47	5			SI5		TCZ-4.7	5W5V5	GP1K-050		ZT-555	5GA-V5
C48	47			SI47		D6-470		GP1K-470		UC-5447	5GA-Q47
C49	5000			BPD-005		MD-502	TM5D5	811-005		DC-525	5HK-D5
C50	5000			BPD-005		MD-502	TM5D5	811-005		DC-525	5HK-D5
C51	5000			BPD-005		MD-502	TM5D5	811-005		DC-525	5HK-D5
C52	1000			SI1000		D6-102	TM5D1	GP2L-102		UC-521	5HK-D1
C53	.003	600		P688-003		DF-303	PTE4S22	GP2-333-302		PT623	6TM-D3
C54	.023	400		P488-022		DF-203	PTE4S22			PT1423	4TM-S22
C55	.003	600		P688-003		D6-302	PTE6D3	GP2-333-302		PT623	6TM-D3
C56	.022	400		P488-022		DF-203	PTE4S22			PT1423	4TM-S22
C57	.1	400		P488-1		DF-104	PTE4P1			PT401	4TM-P1
C58A	.005										
B	350			†PC-70			†1406-01			†104C4	
C											
C59	.0047	600		P688-0047		D6-472	PTE6D47	GP2-333-472		PT6247	6TM-D47
C60	.0047	600		P688-0047		D6-472	PTE5D47	GP2-333-472		PT5247	5TM-D47
C61	270	500		SI270		D6-271		GP2K-271		UC-5327	5GA-T27
C62	.05	600		P688-05		DF-503	PTE685			PT615	6TM-S5

CAPACITORS (cont)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Kaye-Halbert PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C63A	.002			P688-002		PTE6D2		PTE22		
B	.005			P688-005	•PC-100	PTE6D5	•1405-01	PTE25	•101C1	
C	.005			P688-005		PTE5D5		PTE25		
C64	.0068	600		P688-0068	D6-682	PTE6D68	GP2-333-682		6TM-D68	Note 1
C65	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C66	.05	600		P688-05	DF-503	PTE635		PT615	6TM-S5	
C67	.1	600		P688-1	DF-104	PTE6P1		PT605	6TM-P5	
C68	.068	600		P688-068		PTE6S68				
C69	.22	200		P288-22		PJP225		PT402S	2TM-P22	
C70	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C71	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C72	1000			BPD-01	DD-102	TM5S1		DC-511	5HK-S1	
C73	.0047	600		P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C74	.047	600		P688-047	DF-503	PTE6S47		PT615	6TM-S5	
C75	4000	500		1464-004		LDH5D4		MCB463	MH-34	
C76	330	500		1469-00035						
C77	.0022	600		P688-0022	D6-222	PTE6D22	GP2-333-223	PT6223	6TM-D23	
C78	500	500		1468-0005		6R375		MCB345	MH-35	
C79	.22	600		P688-25		PTE6P25		PT6025	6TM-P25	
C80	.05	600		P688-05		PTE635		PT615	6TM-S5	
C81	.05	600		P688-05		BLL5S5		PT615	6TM-S5	
C82	1500			SI1500	D6-152	TM5D15	801-0015	UC-5215	5CA-T15	
C83	.22	600		P688-25		PTE6P25		PT6025	6TM-P25	
C84	500	3000							30GA-Q5	Note 2
C85	120									
C86	50	3000							30GA-Q5	Note 2
C87	.0047	600		P688-0047		PJD47		PT6247	6TM-D47	
C88	.0047	600		P688-0047		PJD47		PT6247	6TM-D47	

Note 1. Some Models use .005MFD in this application.
Note 2. Not used in all Models.
† Items C58A, C58B, C58C, R64A, R64B are combined in one unit.
When replacing items separately C58B and C58C should total 250MMF.
• Items C63A,C63B, C63C, R77A, R77B, R77C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Kaye-Halbert PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2000Ω	½	M-116-B	Q7-475•			WF23	Contrast-Panel
B	500KΩ	2					UR58A	Volume-Rear
C	Switch						US-37	Attach to R1B
R2A	2250Ω	4	M-112-A		A10-2500		TVF143	Focus-Wire Wound
B	Shaft		Not Req.		KS8-3		Not Req.	Attach to R2A
R3A	2 Meg	½	M-106-A	Q11-139	AG-83-8	AB-75	U-56	Height
B	Shaft		Not Req.	Not Req.	KS8-3	AK-4	Not Req.	Attach to R3A
R4A	2250Ω	4	M-112-A		A10-2500		TVF143	Vert. Linearity-Wire Wound
B	Shaft		Not Req.		KS8-3		Not R eq.	Attach to R4A
R5A	2 Meg	½	M-106-A	Q11-139	AG-83-8	AB-75	U-56	Vert. Hold
B	Shaft		Not Req.	Not Req.	KS8-3	AK-4	Not Req.	Attach to R5A
R6A	500KΩ	½	M-120-A	Q11-133	AG-58-6	AB-59	U-50	Brightness
B	Shaft		Not Req.	Not Req.	KS8-3	AK-4	Not R eq.	Attach to R6A
R7A	10KΩ	½	M-128-B	Q11-118	AG-27-5	AB-14	U-30	Horiz. Drive
B	Shaft		Not Req.	Not Req.	KS8-3	AK-4	Not Req.	Attach to R7A
R8A	500KΩ	½	M-134	Q13-133	AG-60-8	B-60-8	U-48	Volume (Remote Unit)
B	Shaft		Not Req.	Not Req.	PS-3	Not Req.	Not Req.	Attach to R8A
C	Switch		Not Req.	78-2		SWB-2	Not Req.	US-37 Attach to R8A

• CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B17-110 & P1-210 (Panel B13-133 & R1-300 (Rear) & SWITCH 78-2.

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Kaye-Halbert PART No.	IRC PART No.	NOTES
R9	15KΩ	½			
R10	47KΩ	½			
R11	270KΩ	½			
R12	470Ω	1		BTS-470	
R13	180KΩ	½		BTS-180K	
R14	10KΩ	½			
R15	220KΩ	½			
R16	15KΩ	½			
R17	10KΩ	½			
R18	15KΩ	½			
R19	4700Ω	2		BTB-4700	
R20	10KΩ	½			
R21	47Ω	½		BTS-47	
R22	120Ω	½		BTS-120	
R23	100Ω	½		BTS-100	
R24	8200Ω	½			
R25	47Ω	½		BTS-47	
R26	47Ω	½		BTS-47	
R27	1500Ω	½		BTS-1500	
R28	100Ω	½		BTS-100	
R29	10KΩ	½			
R30	3900Ω	½		BTS-3900	
R31	39KΩ	½		BTS-39K	
R32	10KΩ	½		BTS-10K	
R33	22KΩ	½		BTS-22K	
R34	39KΩ	½		BTS-39K	
R35	39KΩ	½		BTS-39K	
R36	3300Ω	½		BTS-3300	
R37	470KΩ	½		BTS-470K	
R38	220Ω	½		BTS-220	
R39	3300Ω	2		BTB-3300	
R40	68KΩ	½		BTS-68K	
R41	220KΩ	½		BTS-220K	
R42	10KΩ	½		BTS-10K	
R43	47KΩ	½		BTS-47K	
R44	100KΩ	½		BTS-100K	
R45	22KΩ	½		BTS-22K	
R46	3300Ω	½		BTS-3300	
R47	1.5Meg	½		BTS-1.5Meg	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Kaye-Halbert PART No.	IRC PART No.	NOTES
R48	5.6Meg-5%	½		BTS-5.6Meg-5%	
R49	180KΩ	½		BTS-180K	
R50	330KΩ-5%	½		BTS-330K-5%	
R51	100Ω	½		BTS-100	
R52	1000Ω	½		BTS-1000	
R53	100Ω	½		BTS-100	
R54	1000Ω	½		BTS-1000	
R55	82Ω	½		BTS-82	
R56	22KΩ	½		BTS-22K	
R57	10KΩ	½		BTS-10K	
R58	10KΩ	½		BTS-10K	
R59	1 Meg	½		BTS-1 Meg	
R60	1800Ω	½		BTS-1800	
R61	220Ω	½		BTS-220	
R62	1000Ω	½		BTS-1000	
R63	1 Meg	½		BTS-1 Meg	
R64A	500KΩ	½			†
B	500KΩ	½			†
R65	1000Ω	1		BTA-1000	
R66	1000Ω	1		BTA-1000	
R67	470KΩ	½		BTS-470K	
R68	4.7Meg	½		BTS-4.7Meg	
R69	100KΩ	½		BTS-100K	
R70	15KΩ	½		BTS-15K	
R71	27KΩ	½		BTS-27K	
R72	10KΩ	½		BTS-10K	
R73	470KΩ	½		BTS-470K	
R74	3300Ω-5%	½		BTS-3300-5%	
R75	3900Ω-5%	½		BTS-3900-5%	
R76	22KΩ	½		BTS-22K	
R77A	22KΩ	½		BTS-22K	
B	8200Ω	½		BTS-8200	•
C	8200Ω	½		BTS-8200	
R78	82KΩ	½		BTS-82K	
R79	150KΩ	½		BTS-150K	
R80	1.8Meg	½		BTS-1.8Meg	Note 1
R81	1.8Meg	½		BTS-1.8Meg	Note 1
R82	330KΩ-5%	½		BTS-330K-5%	

RESISTORS (cont)

ITEM No	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Kaye-Halbert PART No.	IRC PART No	NOTES
R83	1 Meg	½		BTS-1 Meg	
R84	1.5Meg	½		BTS-1.5Meg	
R85	120KΩ	1		BTA-1200	Note 2
R86	1200Ω	1		BTA-1200	Note 2
R87	560Ω	½		BTS-560	
R88	560Ω	½		BTS-560	
R89	1000Ω	½		BTS-1000	
R90	100KΩ-5%	½		BTS-100K-5%	
R91	100KΩ-5%	½		BTS-100K-5%	
R92	4.7Meg	½		BTS-4.7Meg	
R93	470KΩ	½		BTS-470K	
R94	1500Ω	½		BTS-1500	
R95	5600Ω	½		BTS-5600	
R96	120KΩ-5%	½		BTS-120K-5%	
R97	150KΩ	½		BTS-150K	
R98	5600Ω	½		BTS-5600	
R99	470KΩ	½		BTS-470K	

ITEM No	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Kaye-Halbert PART No.	IRC PART No	NOTES
R100	120Ω	½			
R101	150Ω	5		1 3/4A-150	
R102	10KΩ	2		BTB-10K	
R103	430Ω	15		2D-430	
R104	6.8Ω	1			
R105	3.9Ω	2			
R106	560KΩ	½			
R107	560KΩ	½			
R108	2500Ω	20		2D-2500	
R109	270Ω	3			
R110	2700Ω	1		BTA-2700	Note 3
R111	1200Ω	25		BTB-1200	Note 3
R112	17Ω	10			
R113	220KΩ	½		BTS-220K	
R114	120Ω	1			
R115	10KΩ	½		BTS-10K	

Note 1. Some models may use a single 1.2Meg resistor in this application.
Note 2. Some models may use a single 230Ω resistor in this application.
Note 3. Some models may use a single 820Ω resistor in this application
† Items R84A, R84B, R84C, C58A, C58B, C58C are combined in one unit.
• Items R77A, R77B, R77C, C63A, C63B, C63C are combined in one unit.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: Kaye-Halbert PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA TYPE No.
T1	117VAC	680VCT @ 2.4A	5VAC @6A	6.3VAC @1.2A						
				SEC. 4 6.3VAC @10.7A						
T2	117VAC Low	6.3VAC .52A				P-6134 ①	P-2944			

① Drill one new mounting hole.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: Kaye Halbert PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA TYPE No.	NOTES
T3	250Ω	1.4KΩ	C-3102	A-8125	A-3008	TSO-5①	A-97X	208T2④	Vert. Osc.Trans.
T4	354Ω tap	0Ω						235T1	Horiz.Output Trans.
	@2.4Ω,								
	5.3Ω,								
	5.1Ω,								
	14.3Ω,								
	160,24Ω								
T5	210Ω	10Ω	C-2302						Vert. Output Trans.
T6A	15Ω				MDF-90			219D1	Horiz. Deflection Coils
B	48Ω								Vert. Deflection Coils
T7	170Ω						B-1609		Focus Coil
T8	8Ω				MWC-6	TW-7	WC-13 ④	213R1	Horiz. Linearity Coil
T9	3.8Ω	8.7Ω							AFC Trans.
T10	12.5Ω			WC-5	MWC-1①	TWL-1	WC-11④		Width Coil

① Drill one new mounting hole.
② Connect to coded blue and red terminals.
③ Enlarge mounting hole.
④ Mount on top of chassis.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: Kaye-Halbert PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T11	4.8KΩ	3 to 4Ω	220Ω	1.05Ω		A-3877	A-2930	RO-8	S-3X	

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: Kaye-Halbert PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1	Ant. Coils	OOCT	0Ω					
L2	Fil. Choke	0Ω						
L3	Neutr.Coil	0Ω						
L4	RF, Mixer Grid & Osc. Coils	0Ω						
L5	Fil. Choke	0Ω						
L6	RF Choke	0Ω						
L7	Conv.Plate	.7Ω						
L8	Fil. Choke	0Ω			19-3001	TV-189	6175	.4 Microhenry
L9	1st. Video IF	.6Ω			19-1020	TV-13 •	6171 •	
L10	2nd. Video IF	.3Ω	.3Ω		17-1066		6249	
L11	3rd. Video IF	.3Ω	.3Ω		17-1063		6349	
L12	Cathode Trap	0Ω	0Ω		20-1021	TV-150	6183	
L13	4th. Video IF	.3Ω	.3Ω					Includes trap
L14	Series Peaking Coil	9.5Ω			19-4180	TV-183	6179	180 Microhenries wound on 39KΩ resistor
L15	Shunt Peaking Coil	12Ω			19-3250	TV-186	6181	250 Microhenries
L16	4.5MC Trap	1.4Ω			20-1004	TV-151	1470	
L17	Series Peaking Coil	12Ω			19-3250	TV-186	6181	250 Microhenries
L18	Series Peaking Coil	7.5Ω			19-3125 †	TV-182	6178	120 Microhenries wound on 22KΩ resistor

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PARTS LIST AND DESCRIPTIONS (Continued)

COILS (cont)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	Kaye-Halbert PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L19	Shunt Peaking Coil	6.5Ω			19-3093	TV-181	6177	93 Microhenries
L20	1st. Sound IF	1.1Ω			17-3400	TV-151	1469	
L21	2nd. Sound IF	3.1Ω	2.1Ω		16-3445	TV-113 ■	6203 ■	
L22	Ratio Det.	11Ω	.3ΩCT		17-1033	TV-110	1468	Tertiary Wind-.25Ω
L23	Horiz. Osc.	110Ω			19-1576	TV-163	6210	

* Enlarge mounting hole.
† Parallel with 22KΩ resistor
■ Drill new mounting holes and use adaptor plate.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	Kaye-Halbert PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L24	.260ADC	43Ω	1.68 Hy.		C-2326 ①	C-2991 ①	TR-3300 ①	C-17X ①

① Drill one new mounting hole.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Kaye-Halbert PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG S/B P/T	1/4 A. 125V.			315.250		MDV	
M2	3AG S/B P/T	1A. 125V.			315001		MDV 1	

MISCELLANEOUS

ITEM No.	PART NAME	Kaye-Halbert PART No.	NOTES
M3	RF Tuner		
M4	Crystal Diode		Video Detector (1N60 or 1N64)
M5	Relay		Off/On (Remote)
M6	Relay		Channel Selector (Remote)
M7	Solenoid		Channel Selector (Remote)
M8	Switch		TV-Phono Selector (DPDT Slide)
M9	Switch		Remote Channel Selector
M10	Ion Trap		

TROUBLE SHOOTING AIDS (cont)

AUDIO

WEAK OR NO SOUND

Check by substitution V10, V11, V12, V13 and V14. Check stages V13 and V14. Check stages V13 and V14 using audio signal generator.

If Satisfactory	If Unsatisfactory
Check audio IF and ratio detector alignment and associated circuit components.	Check components associated with V13 and V14. especially coupling and bypass capacitors.

BUZZ

Adjust ratio detector secondary (A12) for minimum buzz. If buzz is still objecionable substitute V12 and readjust A12. Check components associated with V12 especially C4 and C51.

DISTORTED

Check by substitution V10, V11, V12, V13 and V14. Check stages of V13 and V14 using audio signal generator and scope.

If Satisfactory	If Unsatisfactory
Check ratio detector and audio IF alignment and components.	Check components associated with V13 and V14.

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POWER

DEAD SET

Check AC interlock assembly. Check power relays M5 and M6. Check switche on volume control. Check T1 and B+ network.

SMALL AND/OR DIM PICTURE

Check by substitution V23 and V24. Check B+ filter and decoupling network.

HIGH VOLTAGE

LOSS OF HIGH VOLTAGE

Check by substitution V19, V20, V21 and V22. Check waveform at W16.

If Satisfactory	If Unsatisfactory
Check R105, R106, R107, C84, C80, C81, C82, T4, T6A and other associated components.	Check components associated with V19 and V20 especially C76, C78 and C77.

INSUFFICIENT HIGH VOLTAGE

Check by substitution V19, V20, V21, V22, V23 and V24. Proceed as outlined under "LOSS OF HIGH VOLTAGE".

BLOOMING

Check by substitution V19, V20, V21, V22, V23 and V24. Check R105, R106, R107, C84, C79, T4, T6A and other associated components.

GENERAL

RASTER SOUND NO PICTURE

See "LOSS OF VIDEO".

SNOWY PICTURE POOR SOUND

Check tuner and video IF tubes and components. Check video detector crystal.

TOTAL LOSS OF SYNC

Check by substitution V15 and V16. Check associated components especially C60, C61 and C62.

INTERMITTENT STREAKS

Check high voltage section for corona discharge and arcing.

Symptoms shown are assumed and are not indicative of the quality and workmanship of this receiving equipment.

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF Tuner Oscillator Circuit may be accomplished by removal of the channel selector and fine tuning knobs. The adjustments are accessible, one at a time, through the small hole in the chassis to the right of the channel selector shaft.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

(On rear apron of chassis.)

Adjust horizontal frequency slug (L23) until picture synchronizes horizontally.

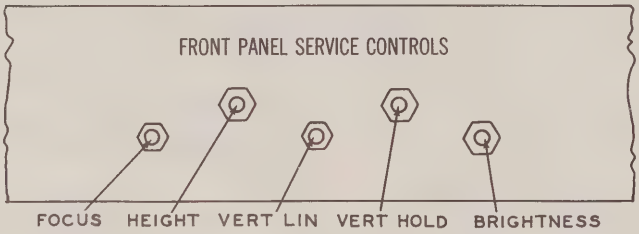
SOUND IF DETECTOR BUZZ ADJUSTMENT

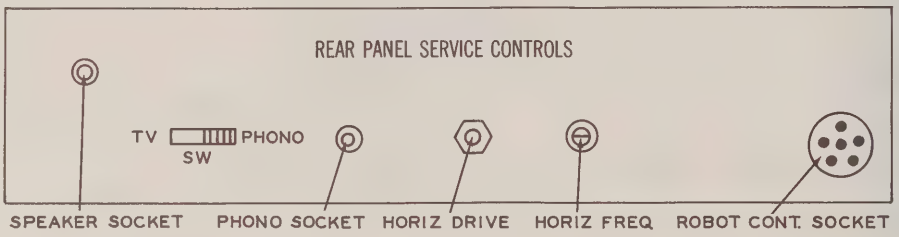
To eliminate sound IF detector buzz, adjust the ratio detector secondary (L22) located on bottom of chassis. (See tube placement chart).

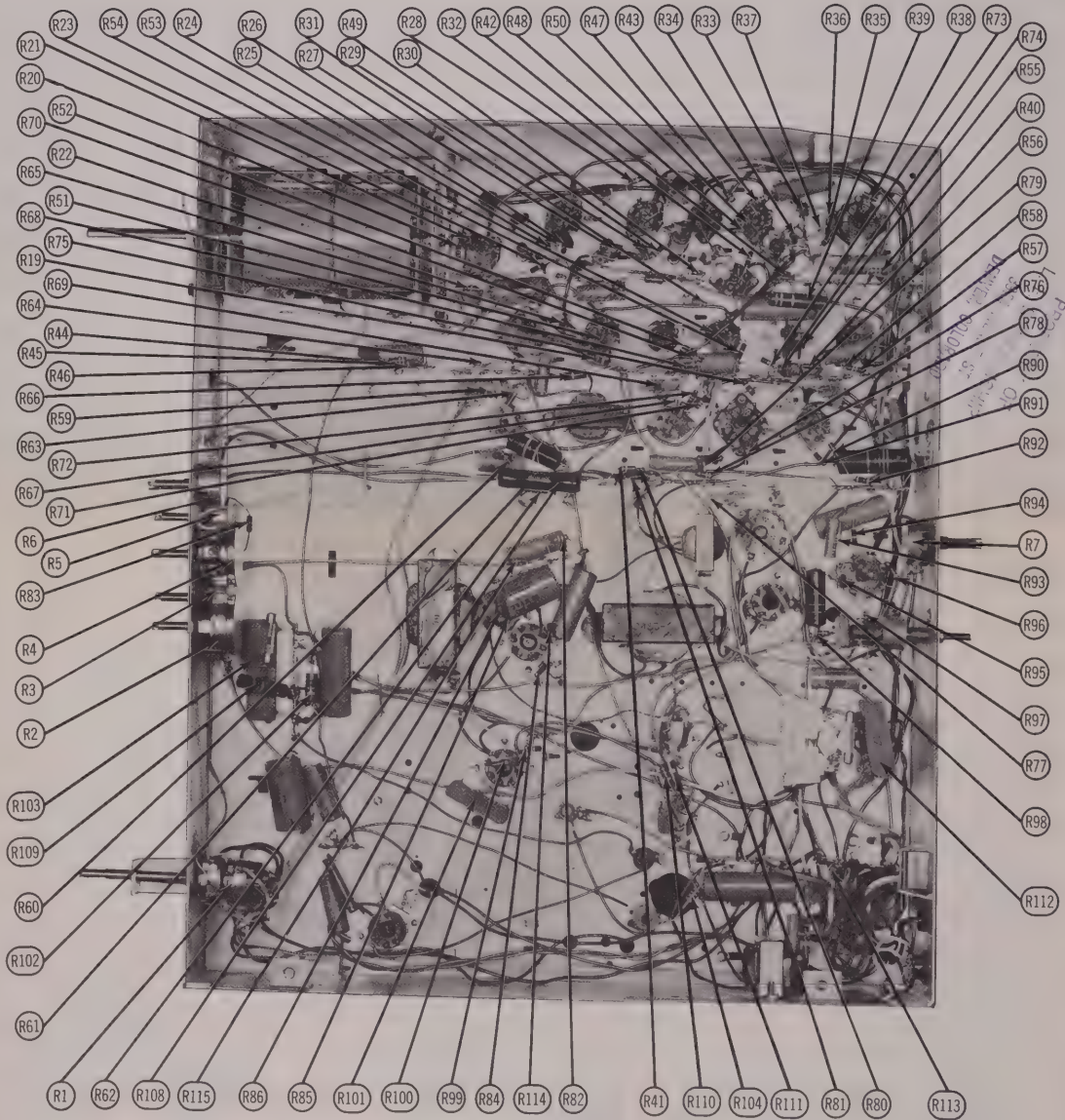
FUSES

Two fuses are used. One for horizontal sweep protection and one for channel selector solenoid protection. (For location, see tube placement chart).

SERVICE ADJUSTMENT LOCATION







CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

KNIGHT MODEL 6K718

PROPERTY OF
DENVER, COLORADO

KNIGHT
MODEL 6K718

KNIGHT
MODEL 6K718

TRADE NAME	Knight Model 6K718
SUPPLIER	Allied Radio Corp., 833 W. Jackson Blvd., Chicago 7, Ill.
TYPE SET	Three Power Portable Superheterodyne Receiver
TUBES (Five)	Types 1U4 RF Amp., 1R5 Conv., 1U4 If Amp., 1U5 Det.-AVC-AF Amp., 3V4 Audio Output
POWER SUPPLY	115-125 Volts AC-DC (or) 9 Volts "A" Supply & 90 Volts "B" Supply
RATING	.20 Amp. @ 117 Volts AC (or) 54MA @ 9 Volts DC & 11MA @ 90 Volts DC
TUNING RANGE—BROADCAST	538-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Use battery power, if possible. If AC power is used, use an isolation transformer when available. If not, connect a .1MFD capacitor in series with low side of the signal generator and B-.
To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 6 (grid) of 1R5 (V2). Low side to B-.	455KC (400~Mod)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If AC power is used without an isolation transformer, reduce dummy antenna to 200MMF to reduce hum modulation.
2.	"	High side to pin 6 (grid) of 1U4 (V1). Low side to chassis.	1620KC	"	"	A5	If range of A5 is insufficient, adjust trimmer at opposite end of stator plates.
3.	"	"	1400KC	Tune to 1400KC signal	"	A6	Adjust for maximum output.
4.	"	"	600KC	Tune to 600KC signal	"	A7	"
5.		Loop	1400KC	Tune to 1400KC signal	"	A8	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
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PARTS LIST AND DESCRIPTIONS

KNIGHT MODEL 6K718

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: KNIGHT PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1	RF Amplifier	1U4	1U4	6AR	
V2	Converter	1R5	1R5	7AT	
V3	IF Amplifier	1U4	1U4	6AR	
V4	Det-AVC-AF Amp.	1U5	1U5	6BW	
V5	Audio Output	3V4	3V4	6BX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: KNIGHT PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲50	150	CE-36	AFH4-23		DO30		FP408	R1366	
B	■30	150								
C	▲25	150								
D	200	10								
C2	10	50	C205	PRS50/10		BR105A		TC-32	TVA-1304	Note 3
C3	.1	400	C208	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C4	.1	400	C208	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C5	.1	400	C208	P488-1	DF-104	PTE4P1		PT401	4TM-P1	Note 1
C6	12			SI12	D6-120		GP1K-120	UC-5412	5GA-Q12	Note 1
C7	.05	200	C207	P288-05	DF-503	PTE4S5		PT415	4TM-S5	
C8	100		CC200	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C9	.01	600	C206	P688-01	D6-103	PTE6S1	811-01	PT611	6TM-S1	
C10	100		CC200	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	Note 1
C11	.002	400	C203	P688-002	D6-202	PTE6D2	811-002	PT622	6TM-D2	
C12	200		CC200	SI200	D6-201	TM5T2	GP1K-201	UC-532	5GA-T2	Note 2
C13	200		CC201	SI200	D6-201	TM5T2	GP1K-201	UC-532	5GA-T2	
C14A	50			SI50		TM5Q5		UC-545		
B	.005			BPD-005	♦PC-90	TM5D5	♦1407-01	DC-525	♦103C2	
C	.002			BPD-002		TM5D2		DC-522		
C15	.002	400	C203	P688-002	D6-202	PTE6D2	811-002	PT622	6TM-D2	
C16	.05	600	C204	689ZX-05		PJ6S5		PT615	6TM-S5	

Note 1. Not used in all Models.
Note 2. Some Models use a 100MMF in this application.
Note 3. Some Models use a 10MMF @ 25V in this application.
♦ C14A, C14B, C14C, R8A, R8B, R8C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: KNIGHT PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1 Meg	½	RV-44C	Q13-137	AG-63-Z	B-70-S	U-53	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-2	SWB-2	Not Req.	US-27	Attach to R1A

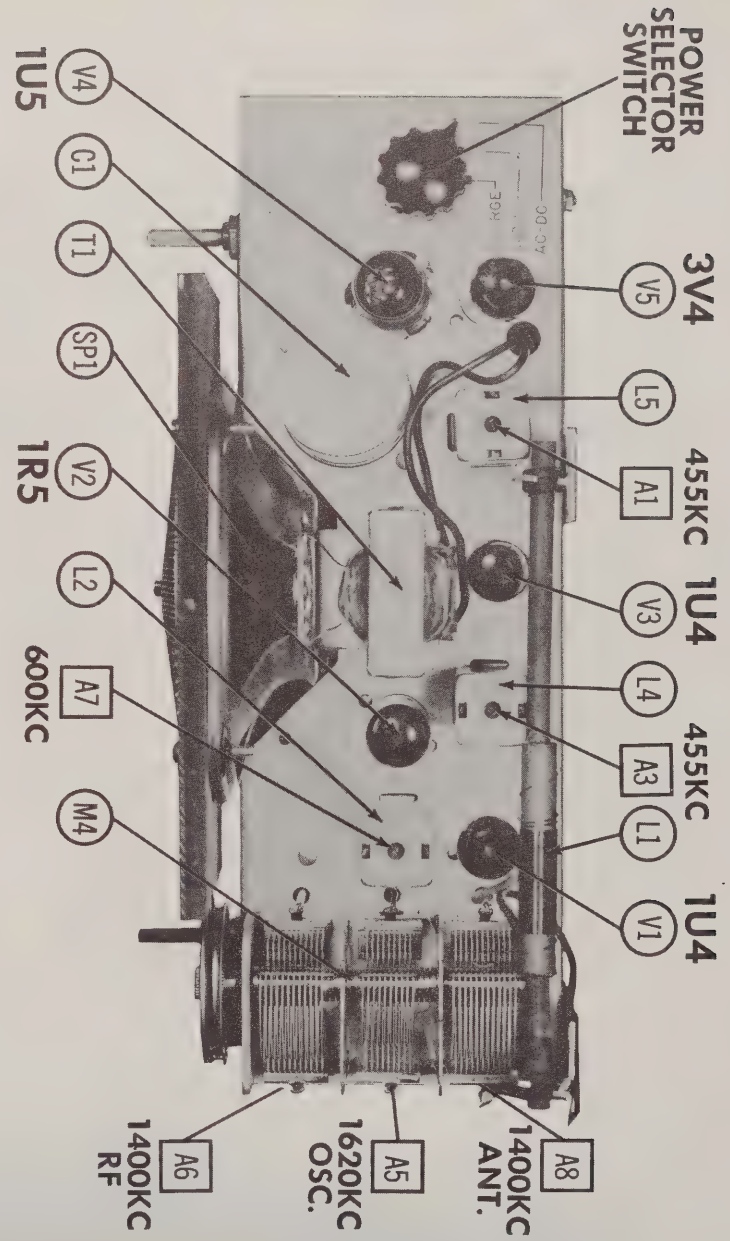
RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: KNIGHT PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R2	1.2Meg	½		BTS-1.2Meg	Note 1
R3	150KΩ	½	R315	BTS-150K	
R4	10 Meg	½	R311	BTS-10 Meg	
R5	2.2Meg	½		BTS-2.2Meg	Note 2
R6	10KΩ	½	R316	BTS-10K	
R7	10 Meg	½	R311	BTS-10 Meg	
R8A	4.7Meg	½		BTS-4.7Meg	
B	1 Meg	½	♦	BTS-1 Meg	
C	2.2Meg	½		BTS-2.2Meg	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: KNIGHT PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R9	5 Meg	½			Note 3
R10	820Ω	½	R317	BTS-820	
R11	820Ω	½	R317	BTS-820	
R12	82Ω	2			Note 5
R13	2025Ω	10	R319		
R14	750Ω	1	R320		
R15	1000Ω	½	R321	BTS-1000	
R16	1200Ω	½		BTS-1200	Note 4
R17	820Ω	½	R317	BTS-820	Note 6

Note 1. Some models may use a 1 Meg resistor in this application.
Note 2. Some models may use a 2 Meg resistor in this application.
Note 3. Some models may use a 10 Meg resistor in this application.
Note 4. Some models may use a 1500Ω resistor in this application.
Note 5. Some models may use a 100Ω resistor in this application.
Note 6. Not used in all models.
♦ Items R8A, R8B, R8C, C14A, C14B, C14C are combined in one unit.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		KNIGHT PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	10KΩ	3.4Ω	570Ω	.58Ω	Part of speaker	A-3879 ①	A-2927 ①	RO-16 ①	S-11X ①	① Bend mtg. tabs down, file out slots, mount on original mtg. bracket.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	KNIGHT PART No.	JENSEN PART No.	QUAM PART No.	
SP1	5"	PM	3.4Ω	PM-250	ST-113 Mod. P4-X	4A07	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	KNIGHT PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Coil	.2Ω		L-A51				
L2	RF Coil	90Ω	6Ω	57FB-4				
L3	Osc. Coil	1.8Ω	8Ω	L-051		BC-381 †	70-Osc. *	
L4	Input IF	18Ω	18Ω	1655-16	16-6758	BC-352	12-C1	
L5	Output IF	18Ω	18Ω	1655-16	16-6758	BC-353	12-C2	

* Disregard tap on secondary winding.
† Disregard tap on secondary winding and drill mounting hole.

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA					
	CURRENT	KNIGHT PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.
M1	.072A		NB5	5M4	1003	6S75	75

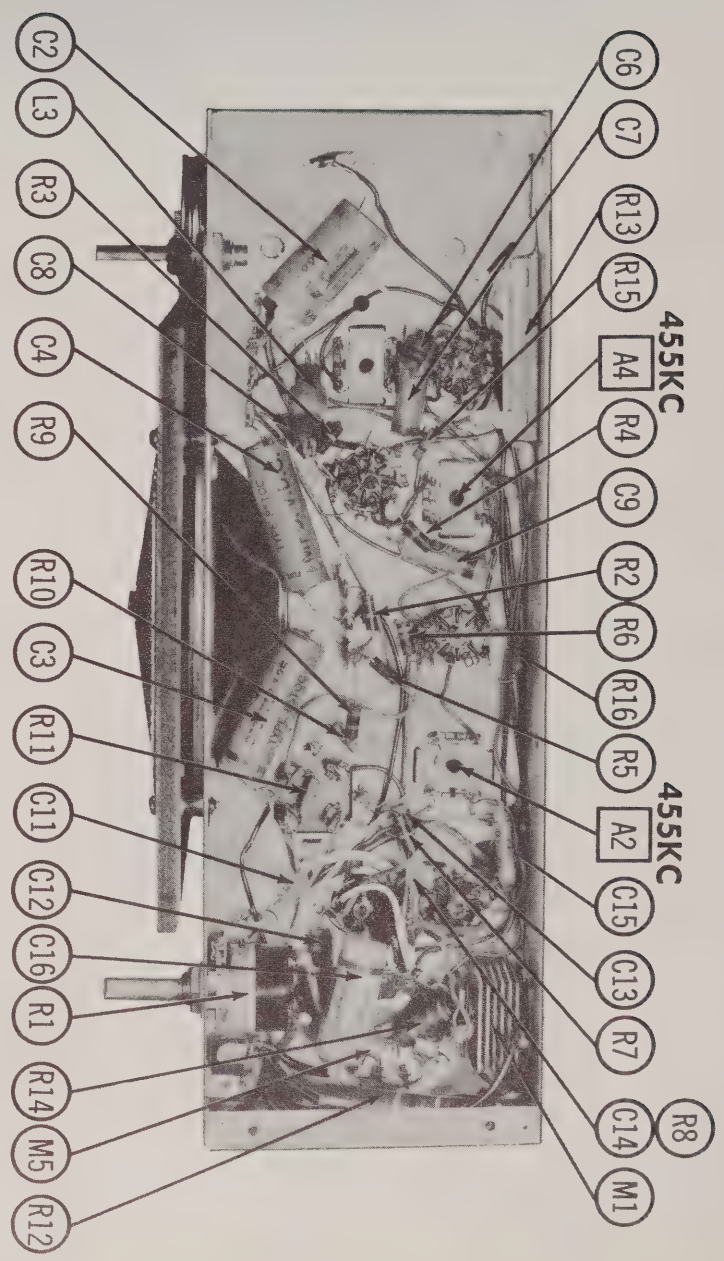
BATTERIES

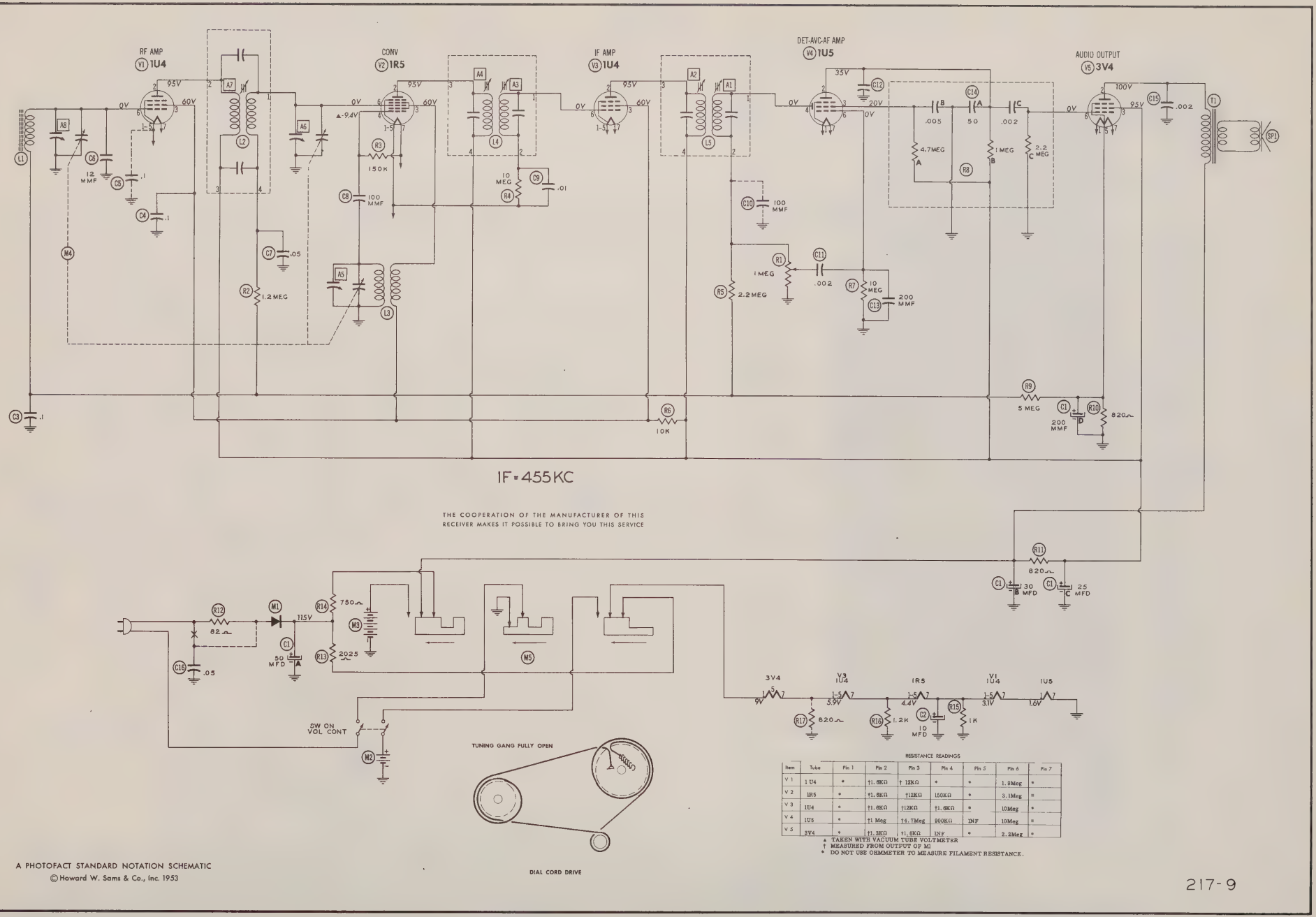
ITEM No.	VOLTAGE	KNIGHT PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M2	4½V		746			G3			2 Used in series
M3	45V			482			M30		2 Used in series

MISCELLANEOUS

ITEM No.	PART NAME	KNIGHT PART No.	NOTES
M4	Tuning Cap.	CV-300	37-417MMF, 18-395, 30-207MMF
M5	Switch	SW-602A	Power Selector
	Cabinet	H53	
	Back	H54	
	Dial	H55	
	Pointer	H56	
	Knob	H51	(3 used)

CHASSIS—BOTTOM VIEW





Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1 U4	*	†1.6KΩ	† 12KΩ	*	*	1.9Meg	*
V 2	1R5	*	†1.6KΩ	†12KΩ	150KΩ	*	3.1Meg	=
V 3	1U4	*	†1.6KΩ	†12KΩ	†1.6KΩ	*	10Meg	*
V 4	1U5	*	†1 Meg	†4.7Meg	900KΩ	INF	10Meg	=
V 5	3V4	*	†1.3KΩ	†1.6KΩ	INF	*	2.2Meg	*

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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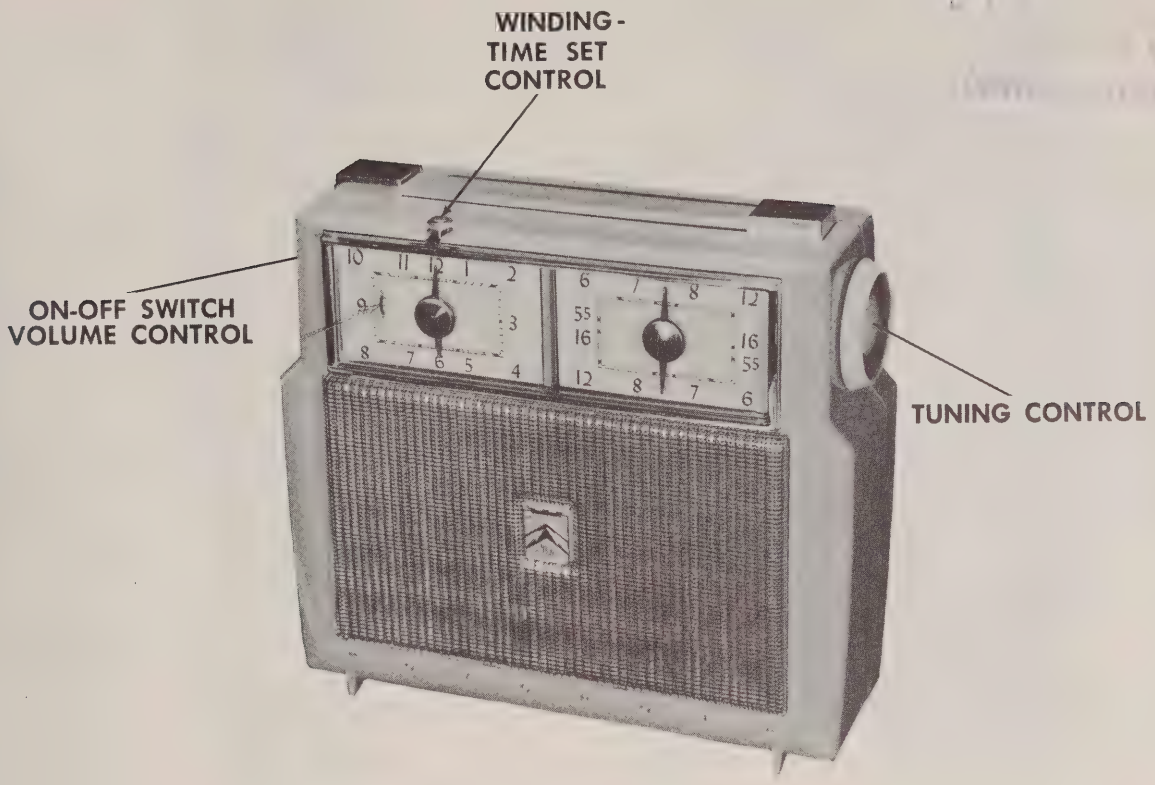
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

MOTOROLA MODELS 53LC1, 53LC2, 53LC3 (Ch. HS-347)



MOTOROLA MODELS 53LC1, 53LC2, 53LC3 (Ch. HS-347)

TRADE NAME	Motorola Models 53LC1, 53LC2, 53LC3 (Ch. HS-347)
MANUFACTURER	Motorola Inc., 4545 Augusta Blvd, Chicago 51, Ill.
TYPE SET	Three Power Portable Superheterodyne Receiver with Spring Wound Clock
TUBES (Four)	Types 1V6 Conv., 1AH4 IF Amp., 1AJ5 Det.-AVC-AF Amp., 3S4 Audio Output
POWER SUPPLY	110-120 Volts AC-DC (or) 3 volts "A" supply & 67½ volts "B" supply
POWER SUPPLY	.25 Amp. @ 117 Volts AC (or) 130MA @ 3 Volts DC & 8.5MA @ 67½ Volts DC
TUNING RANGE—BROADCAST	535-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use battery power, if possible. If AC power is used, use an isolation transformer when available. If not, connect a .1MFD capacitor in series with low side of the signal generator and B-.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
To set pointer, turn tuning capacitor fully closed and set pointer parallel with base of dial.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to stator plates, rear section of tuning gang. Low side to B-.	455KC (400~Mod)	Tuning gang fully open	Across voice coil	A1, A2, A3	Adjust for maximum output. If AC power is used without an isolation transformer, reduce dummy antenna to 200MMF to reduce hum modulation.
2.	"	"	1620KC	"	"	A4	"
3.		Loop	1400KC	Tune to 1400KC signal	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
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PARTS LIST AND DESCRIPTIONS

MOTOROLA
MODEL 53LC1 (Ch. HS-347)

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		MOTOROLA PART No.	STANDARD REPLACEMENT		
V1	Converter	1V6	1V6		
V2	IF Amplifier	1AH4	1AH4		
V3	Det.-AVC-AF Amp.	1AJ5	1AJ5		
V4	Audio Output	3S4	3S4	7BA	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	40	150	23K621793	PRS106D50A					R1392	
B	40	150								
C	250	10								
C2	.05	100	8K71213	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C3	5.6		21R120169							
C4	10		21R120168							
C5	10000		21R482726	BPD-01	DD-1032	TM5S1	811-01	DC-511	5HK-S1	
C6	10000		21R482726	BPD-01	DD-1032	TM5S1	811-01	DC-511	5HK-S1	
C7	10000		21R482720	BPD-01	DD-1032	TM5S1	811-01	DC-511	5HK-S1	
C8A	2000		♦21B621535	BPD-002	D6-202	TM5D2	811-002	DC-522	5HK-D2	
B	150			BPD-00015	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C	10000			BPD-01	DD-1032	TM5S1	811-01	DC-511	5HK-S1	
D	150			BPD-00015	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
E	5000			BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C9	10000		21R482726	BPD-01	DD-1032	TM5S1	811-01	DC-511	5HK-S1	
C10	5000		21R115312	BPD-005	MD-502	TM5D5	811-005	DC-255	5HK-D5	
C11	.1	200	6K490210	P288-1	DF-104	PJ2P1		PT401	2TM-P1	
C12	.047	400	8K490232	489ZX-05		PJ4S47		PT4147	4TM-S47	

♦ Items C8A, C8B, C8C, C8D, C8E, R9A, R9B, R9C, R9D are combined in one unit.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	MOTOROLA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1	1Meg	½	18A630037					Volume & Switch

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MOTOROLA PART No.	IRC PART No.	
R2	3.3Meg	½	6R6497	BTS-3.3Meg	
R3	470KΩ	½	6R6377	BTS-470K	
R4	1000Ω	½	6R6229	BTS-1000	
R5	27KΩ	½	6R6434	BTS-27K	
R6	4.7Meg	½	6R6446	BTS-4.7Meg	
R7	47KΩ	½	6R6048	BTS-47K	
R8	1Meg	½	6R6046	BTS-1Meg	
R9A	10Meg	½	♦21B621535	BTS-10Meg	
B	4.7Meg	½		BTS-4.7Meg	
C	1Meg	½		BTS-1Meg	
D	3.3Meg	½		BTS-3.3Meg	

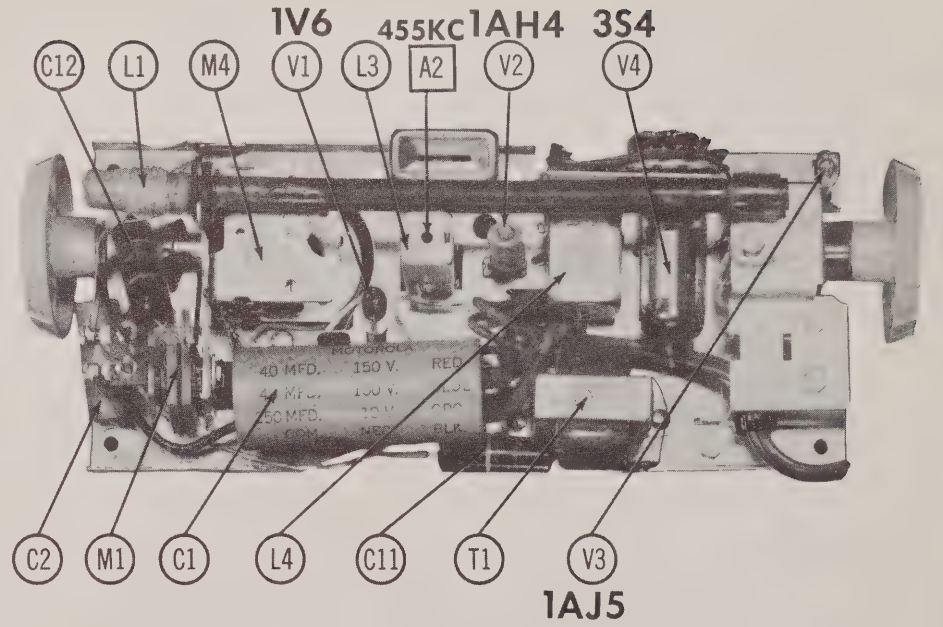
♦ Items R9A, R9B, R9C, R9D, C8A, C8B, C8C, C8D, C8E are combined in one unit.

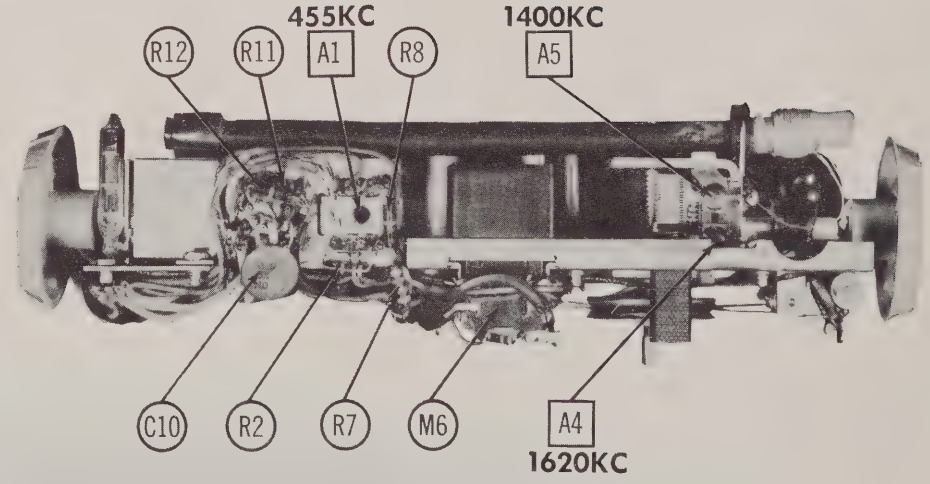
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MOTOROLA PART No.	IRC PART No.	
R10	680Ω	½	6R6040	BTS-680	
R11	270Ω	½	6R6432	BTS-270	
R12	1000Ω	½	6R6229	BTS-1000	
R13	270Ω	½	6R6432	BTS-270	
R14	270Ω	½	6R6432	BTS-270	
R15	33Ω	½	6R2036	BTS-33	
R16	2700Ω	½	6R5577	BTS-2700	
R17A	150Ω	10	17K692009		
B	2000Ω				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		MOTOROLA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	5.8KΩ	3.5Ω	350Ω	.43Ω	25B621637-A		A-2927			

CHASSIS—TOP VIEW





PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	MOTOROLA PART No.	JENSEN PART No.	QUAM PART No.	
SP1	5 x 7"	PM	3.5Ω	50C621647			

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	MOTOROLA PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Coil	1.7Ω		24B621680				
L2	Osc. Coil	4.6Ω	10Ω	24A621678	14-1074		71-Osc.	
L3	Input IF	15Ω	15Ω	24K630207				
L4	Output IF	35Ω	25Ω	24K621628				

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA					
	CURRENT	MOTOROLA PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.
M1	.059ADC	48B791092	NB5	8J1	1002A	6S65	65

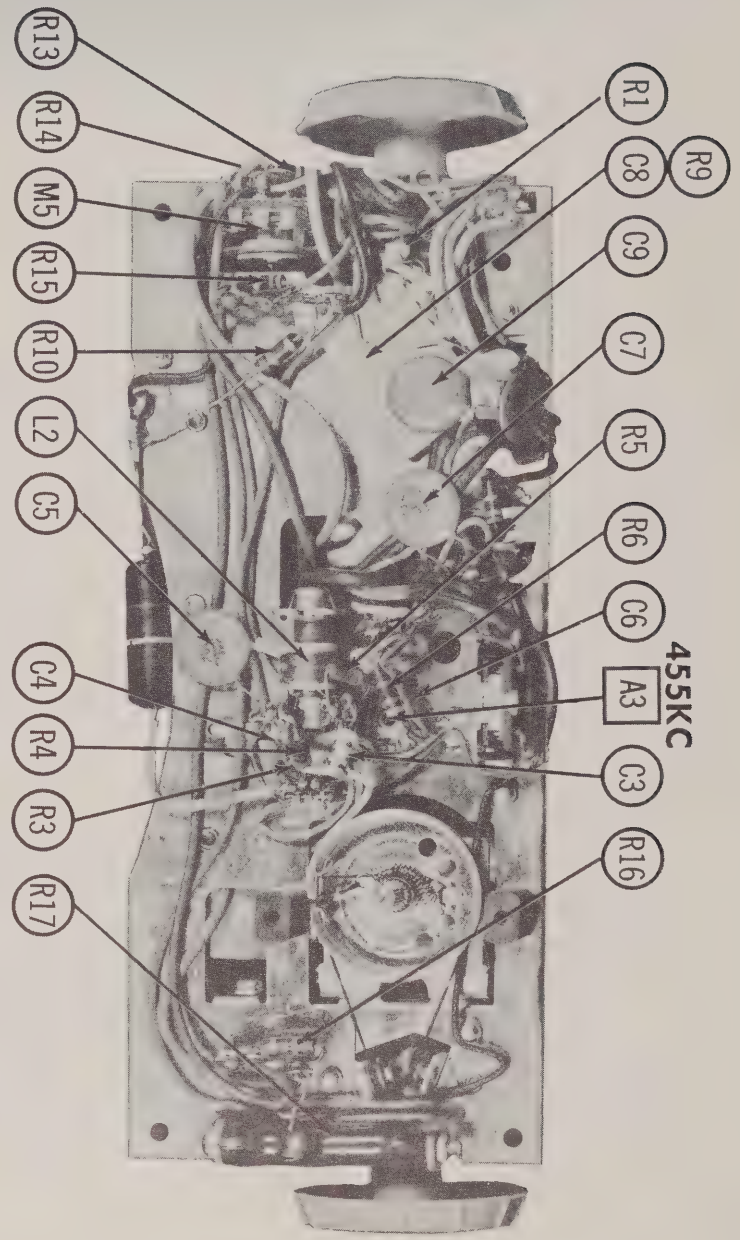
BATTERIES

ITEM No.	VOLTAGE	MOTOROLA PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M2 M3	1.5V "A" 67.5V "B"		964	477		2IR	P-45		(2 used in series)

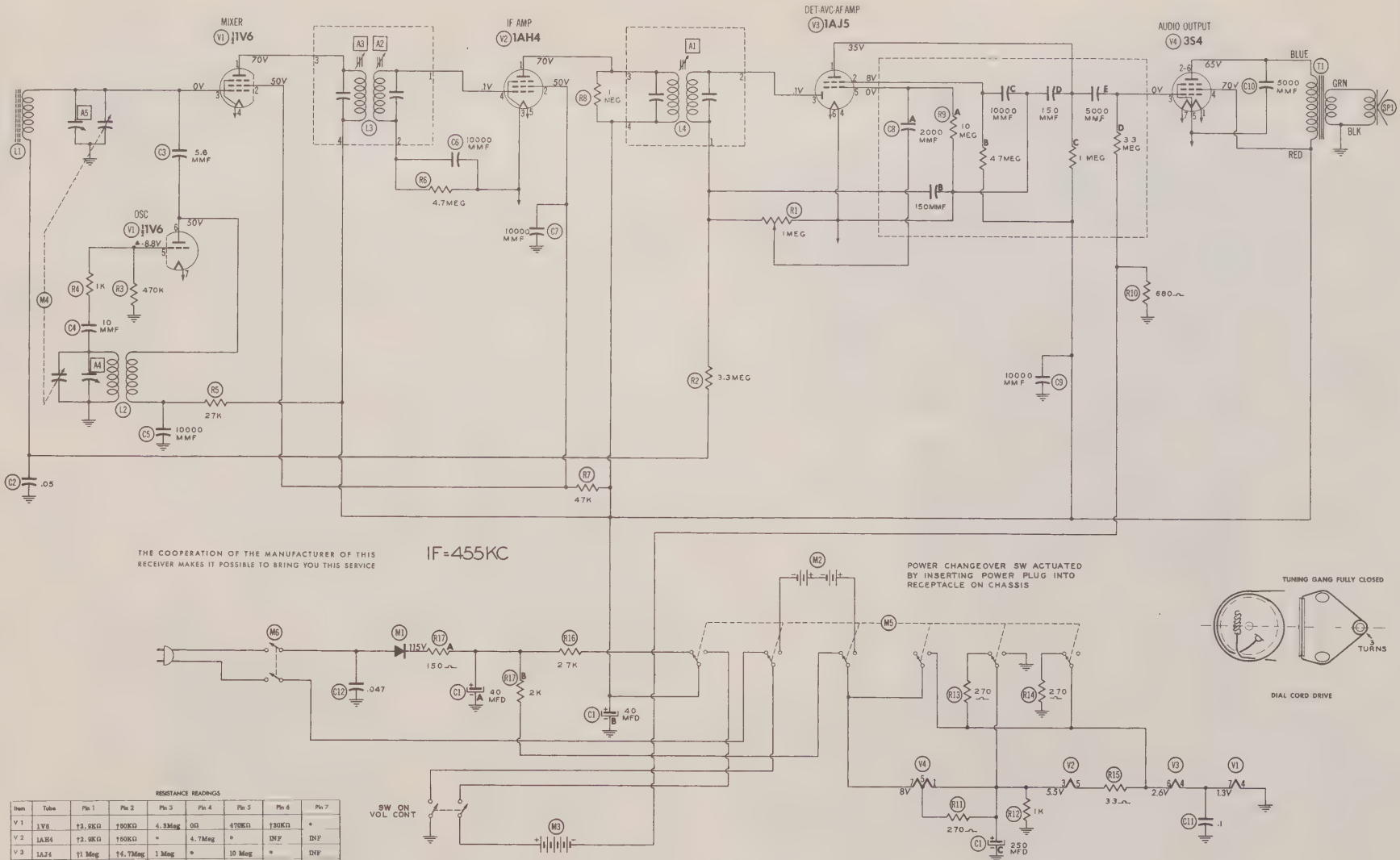
MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M4	Tuning Capacitor	19B621631	11-235MMF, 13-110MMF
M5	Switch	40K621536	Power Selector
M6	Switch	40A621656	Interlock
	Clock	72C621553	One Day mechanical
	Cabinet (Front)	16E621332	Green, Model 53LC1, (Less grille, handle, escutcheon & hardware)
	Cabinet (Front)	16K621815	Maroon, Model 53LC2 (Less grille, handle, escutcheon & hardware)
	Cabinet (Front)	16K621816	Gray, Model 53LC3 (Less grille, handle, escutcheon & hardware)
	Back Cover	16K621335	Green, Model 53LC1 (Less latch spring, spring hinge and battery retainer clips)
	Back Cover	16K621694	Maroon, Model 53LC2 (Less latch spring, spring hinge and battery retainer clips)
	Back Cover	16K621696	Gray, Model 53LC3 (Less latch spring, spring hinge and battery retainer clips)
	Handle	55A621618	Green (Less spring)
	Handle	55K621619	Maroon (Less spring)
	Handle	55K621620	Gray (Less spring)
	Crystal	61C621560	Radio and Clock (2 used)
	Escutcheon	13C621559	Radio and Clock (2 used)
	Grille	1V630097	Speaker
	Knob	1V630652	Green (Off/On/Volume and tuning (2 used)
	Knob	1V630653	Maroon (Off/On/Volume and tuning (2 used)
	Knob	1V630654	Gray (Off/On/Volume and tuning (2 used)

CHASSIS—BOTTOM VIEW



MOTOROLA MODEL 53LC1 (Ch. HS-347)



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1V6	†2.2KΩ	†50KΩ	4.3Meg	0Ω	470KΩ	†30KΩ	*
V 2	1AH4	†2.2KΩ	†50KΩ	*	4.7Meg	*	INF	INF
V 3	1AJ4	†1 Meg	†4.7Meg	1 Meg	*	10 Meg	*	INF
V 4	3S4	*	†2.2KΩ	2.2Meg	†2.2KΩ	*	†2.2KΩ	*

▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM OUTPUT OF M1
* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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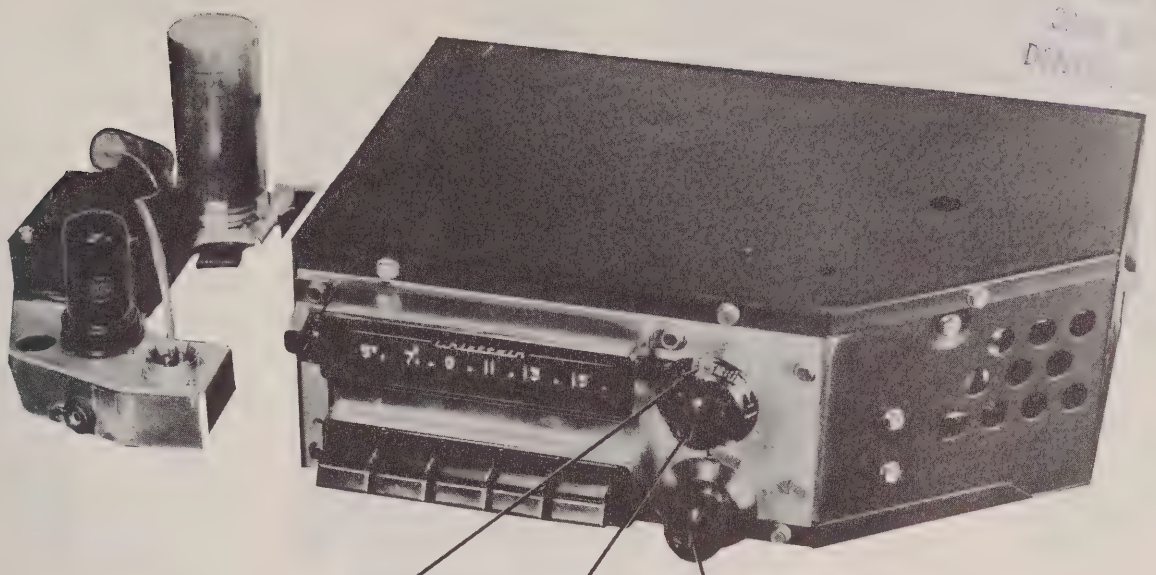
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PROPERTY OF
L. E. [illegible]

PONTIAC
MODEL 984817



PONTIAC
MODEL 984817

TRADE NAME	Pontiac Model 984817 (For 1953 Pontiac Automobiles)
SUPPLIER	Pontiac Motor Div., General Motors Corp., Detroit, Mich.
TYPE SET	Battery Operated Custom Built Automobile Superheterodyne Receiver
TUBES (Eight)	Types 6BA6 RF Amp., 6BE6 Conv., 6BA6 IF Amp., 6AV6 Det.-AF Amp., 6AV6 Phase Inv.-AVC, (2) 6V6GT Audio Output, 0Z4 Rectifier
POWER SUPPLY	6 Volt Storage Battery — RATING 4.6 Amp. @ 6.3 Volts DC
TUNING RANGE—BROADCAST	550-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Before adjusting tuning slugs, remove glyptal seal on slug shafts.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 6BE6(V2). Low side to chassis.	260KC (400~Mod)	Tune to high frequency end stop	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	68MMF	High side to antenna terminal connector. Low side to chassis.	1615KC	"	"	A5, A6, A7	Check setting of oscillator slug (middle coil) and, if necessary, adjust so end of core is 1-25/32" from the mounting end of coil form. Adjust A5, A6, A7 for maximum output.
3.	"	"	1000KC	Tune to 1000KC signal	"	A8, A9	Adjust for maximum output.
4.	"	"	1615KC	Tune to high frequency end stop	"	A6, , A7	"
5.	"	"	1000KC	Tune to 1000KC signal	Not used		Set pointer adjustment screw to place, pointer at 1000KC on the dial.

With radio installed in car and operating, tune to weak station between 600 and 1000KC and adjust A7 for maximum volume.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		PONTIAC PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6BA6	6BA6	7BK	
V2	Converter	6BE6	6BE6	7CH	
V3	IF Amplifier	6BA6	6BA6	7BK	
V4	Detector-AF Amp.	6AV6	6AV6		
V5	Phase Inverter-AVC	6AV6	6AV6	7BT	
V6	Audio Output	6V6GT	6V6GT	7S	
V7	Audio Output	6V6GT	6V6GT	7S	
V8	Rectifier	0Z4	0Z4	4R	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	PONTIAC PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	■15	400	7260065	AFH3-127		CO77		FP345.5	TVL-3630	
B	▲10	400								
C	20	25								
C2	.05	200	6512	P288-05	DF-503	PJ2S5		PT415	2TM-S42	
C3	10	500	G100	1468-00001	D6-100	5W5Q1	GP1K-100	MC215	MS-41	
C4	47	500	G470	SI47	D6-470		GP1K-470	UC-5447	5GA-Q47	
C5	180		7257424							
C6	100	500	G101	1468-0001	D6-101	5W5T1	GP1K-101	MC235	MS-31	
C7	10	500	G100	1468-00001	D6-100	5W5Q1	GP1K-100	MC215	MS-41	
C8	.05	400	6512	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C9	.003	600	6529	P688-003	D6-302	PTE6D3	GP2-333-302	PT623	6TM-D3	
C10	.002	400	6528	P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C11	68	500	G680	SI68	D6-680		GP1K-680	UC-5468	5GA-Q68	
C12	.0025	400	7240578							
C13	.001	600	6527	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C14	.01	600	6533	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C15	.02	600	6534	P688-02	DD-203	PTE6S2		PT612	6TM-S2	
C16	.006	1000	H602	P1088-006	DD16-602	PTE16D6		PT1626	MB-D6	
C17	.006	1600	H602	P1688-006	DD16-602	PTE16D6		PT1626	MB-D6	
C18	.5	100	6592	VHC-36		MP2P5		RF480	68P20	

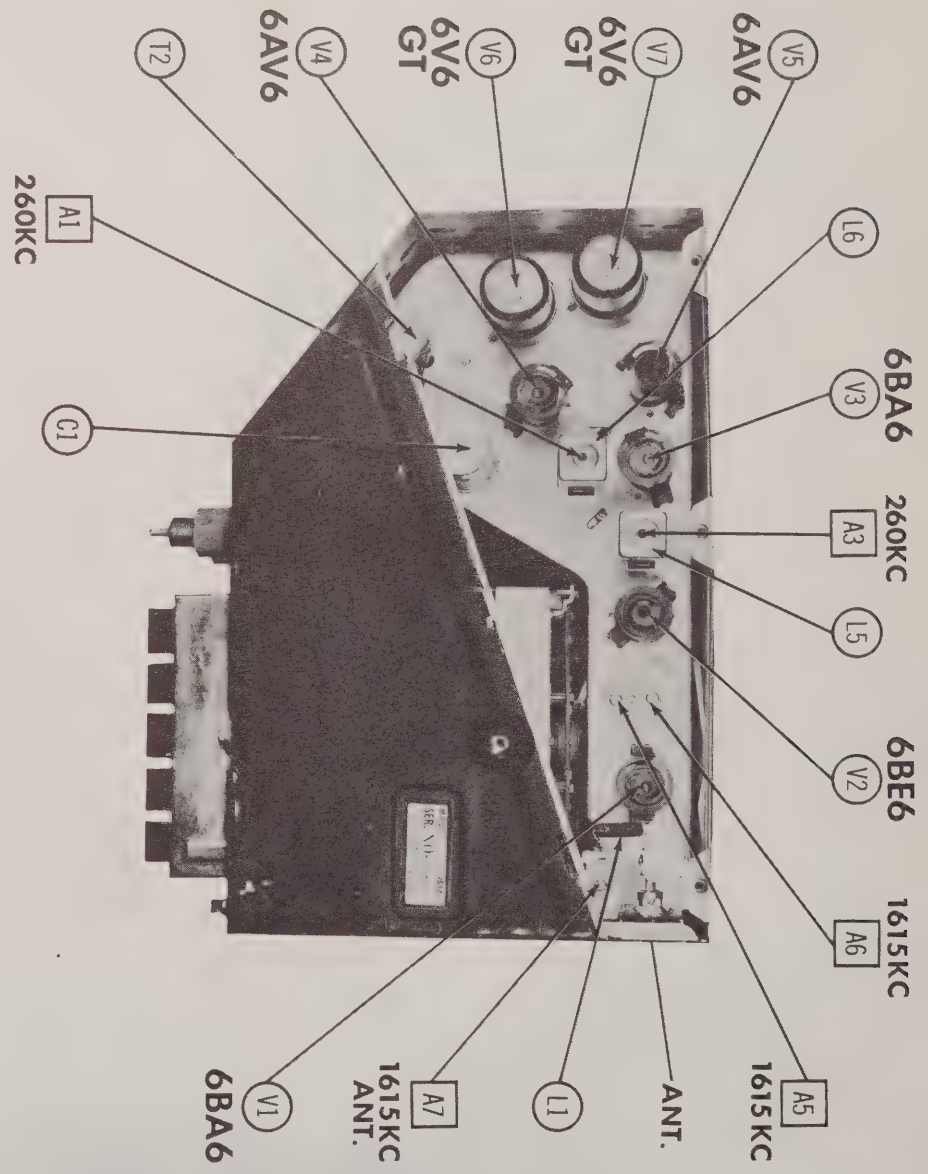
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	PONTIAC PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	Switch		A7262482A					Tone Switch
B	1Meg	½						Volume & Sw. tapped @ 250KΩ

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	PONTIAC PART No.	IRC PART No.	
R2	2.2Meg	½	A225	BTS-2.2Meg	
R3	100Ω	½	A101	BTS-100	
R4	10KΩ	1	B103	BTA-10K	
R5	22KΩ	½	A223	BTS-22K	
R6	330KΩ	½	A334	BTS-330K	
R7	1 Meg	½	A105	BTS-1 Meg	
R8	15KΩ	2	G153	BTB-15K	
R9	220Ω	½	A221	BTS-220	
R10	47KΩ	½	A473	BTS-47K	
R11	330KΩ	½	A334	BTS-330K	
R12	56KΩ	½	1213267	BTS-56K	
R13	180KΩ	½	1215560	BTS-180K	
R14	180KΩ	½	1215560	BTS-180K	
R15	33Ω	½	A330	BTS-33	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (cont)

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	PONTIAC PART No.	IRC PART No.	
R16	220KΩ	½	A224	BTS-220K	
R17	1 Meg	½	A105	BTS-1 Meg	
R18	100KΩ	½	A104	BTS-100K	
R19	680Ω	½	A681	BTS-680	
R20	2200Ω	½	A222	BTS-2200	
R21	220KΩ	½	A224	BTS-220K	
R22	180KΩ	½	1215560	BTS-180K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	PONTIAC PART No.	IRC PART No.	
R23	220KΩ	½	A224	BTS-220K	
R24	470KΩ	2	7262497	BTB-470	
R25	270KΩ	½	A274	BTS-270K	
R26	270Ω	½	A271	BTS-270	
R27	1800Ω	2		BTB-1800	Note
R28	220Ω	1	B221	BTA-220	

Note . Replace with 2700Ω (2 Watt) & 5600Ω (1 Watt) in parallel.

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	PONTIAC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	6.3VAC @2.4A	360VCT .040ADC			726251l		P-3068		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		PONTIAC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T2	9.8KΩ CT	4.8Ω	494Ω CT	.32Ω	7262498	A-3823 ①	A-2936 ①	RO-110 ①	S-15X ①	① Drill new mounting hole.

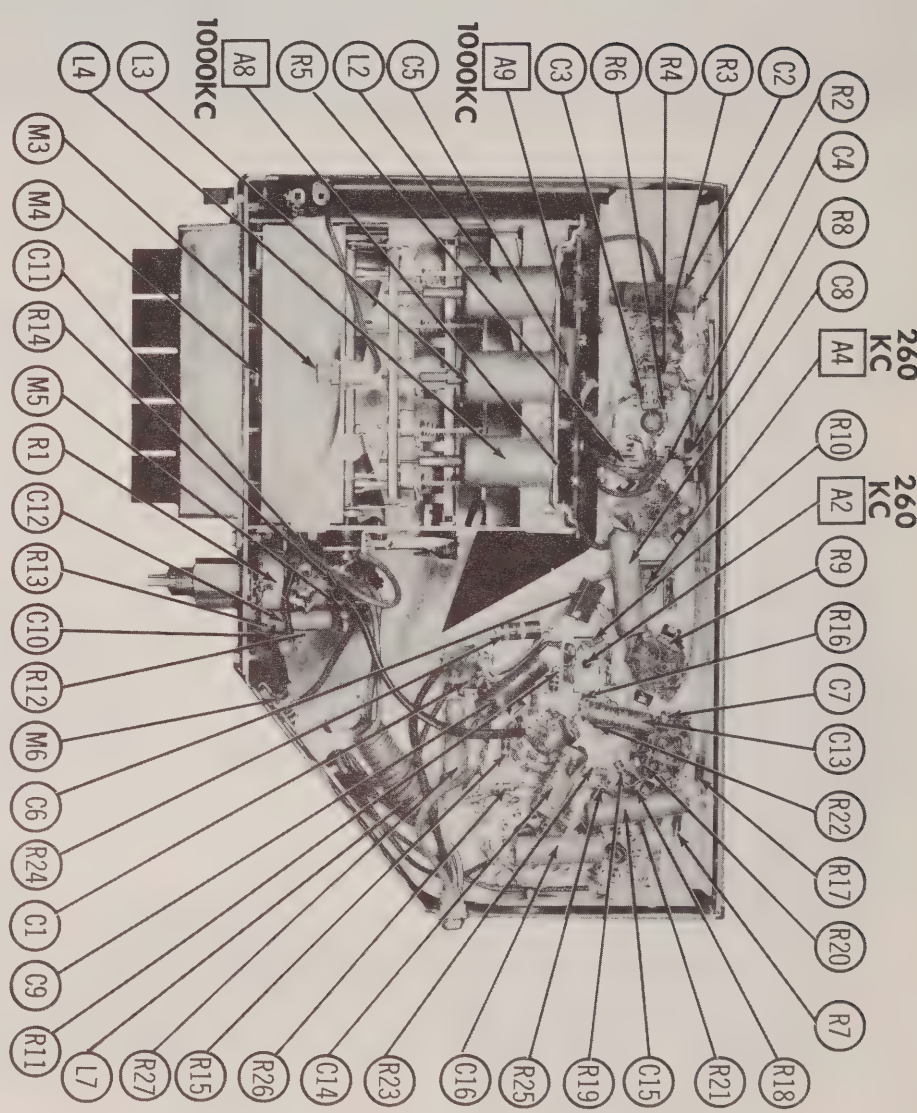
SPEAKER

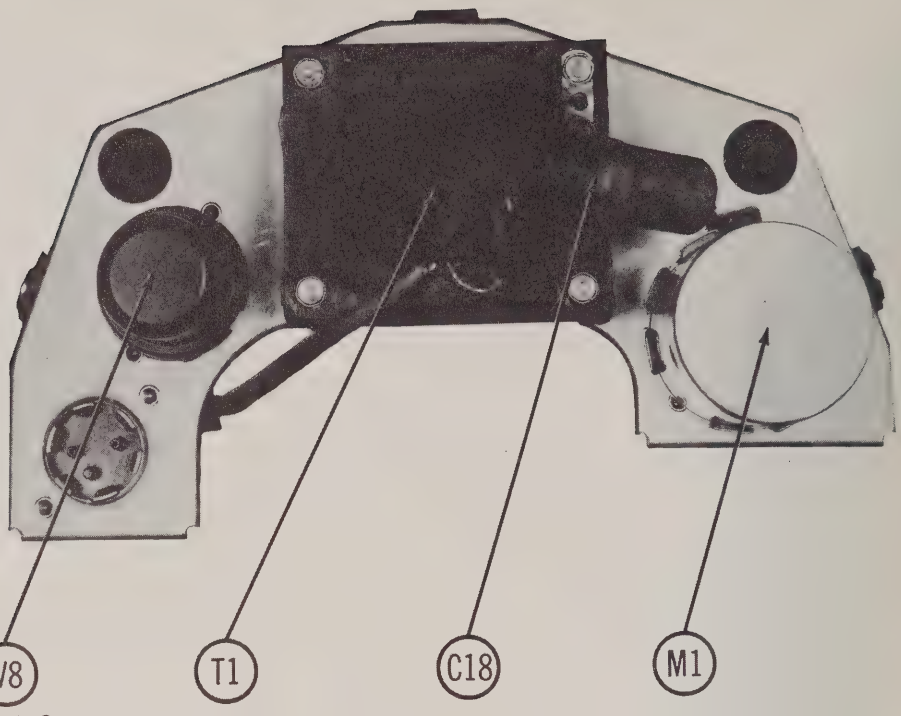
ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	PONTIAC PART No.	JENSEN PART No.	QUAM PART No.	
SP1	8"	PM	4.8Ω	7262525	ST-115 Mod. P8-V	8A21	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	PONTIAC PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	RF Choke	.8Ω		7255738			4612	9 Microhenries
L2	Ant. Coil	10Ω		7258914				Less core, core part #7258468
L3	RF Coil	10Ω		7258914				Less core, core part #7258468
L4	Osc. Coil	1.2Ω	4.5Ω	7260499				Less core, core part #7258468
L5	Input IF	31Ω	31Ω	1218725	16-6752	BC-350	12-H1	
L6	Output IF	31Ω	31Ω	1218726	16-6754	BC-354	12-H6	
L7	Fil. Choke	0Ω						
L8	Vibrator Hash Choke	0Ω		7262504			5221	.03 Microhenry

CHASSIS—BOTTOM VIEW





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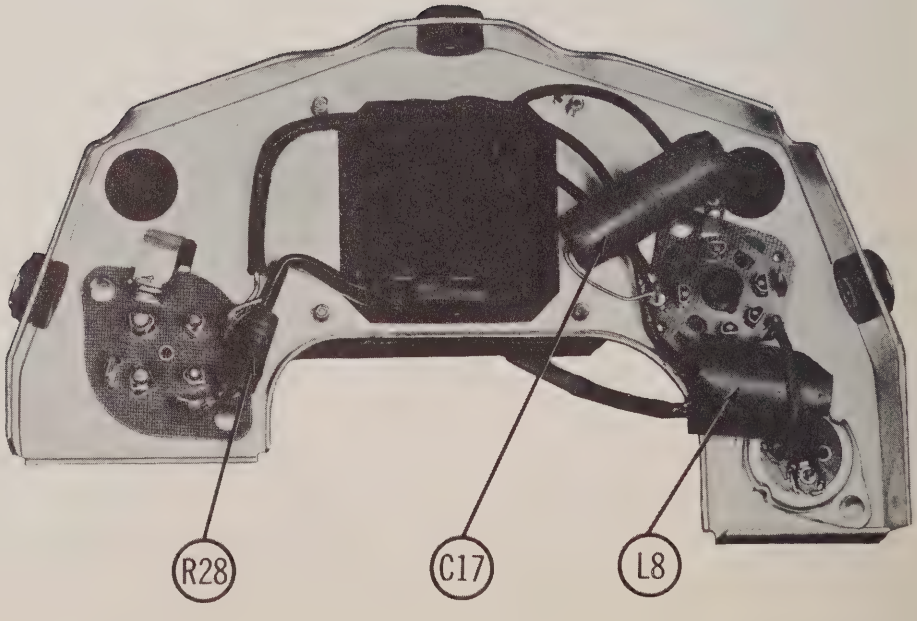

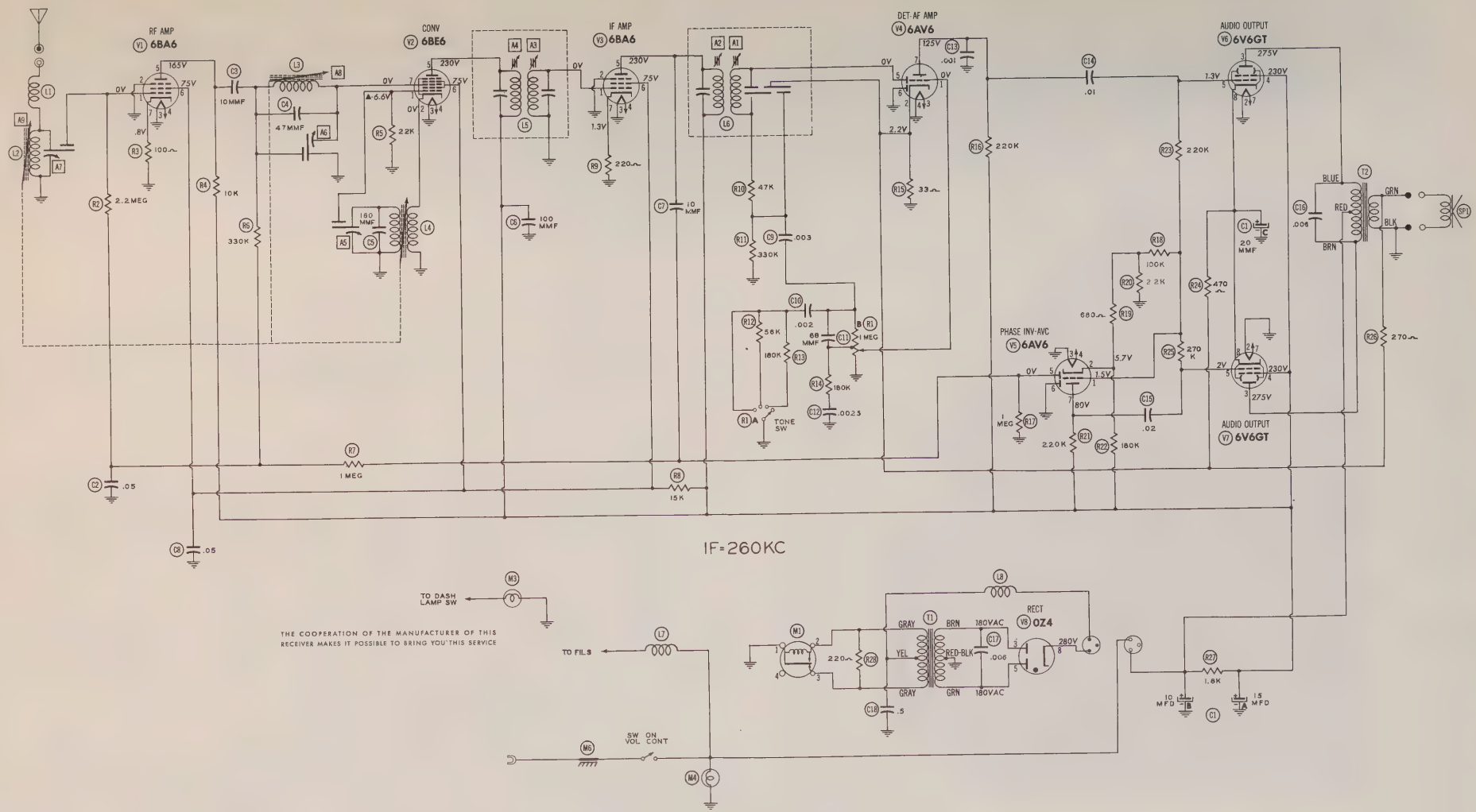

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BA6	4.2Meg	0Ω	0Ω	.3Ω	†12KΩ	†17KΩ	100Ω	
V 2	6BE6	22KΩ	1.2Ω	0Ω	.3Ω	†1.8KΩ	†17KΩ	2.2Meg	
V 3	6BA6	51Ω	0Ω	0Ω	.3Ω	†1.8KΩ	†17KΩ	220Ω	
V 4	6AV6	20Ω	20Ω	.3Ω	0Ω	380KΩ	0Ω	†220KΩ	
V 5	6AV6	100KΩ	2.8KΩ	0Ω	.3Ω	1 Meg	0Ω	†220KΩ	
V 6	6V6GT	INF	0Ω	†240Ω	†1.8KΩ	320KΩ	INF	.3Ω	500Ω
V 7	6V6GT	2 Meg	0Ω	†254Ω	†1.8KΩ	370KΩ	INF	.3Ω	500Ω
V 8	0Z4	0Ω	INF	300Ω	INF	380Ω	INF	INF	150KΩ

▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 8 OF V8.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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217-11

1 - DC Voltage measurements are at 20,000 ohms per volt, AC voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6.3 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage.

PARTS LIST AND DESCRIPTIONS (Continued)

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FRE-QUENCY	REPLACEMENT DATA				NOTES
				PONTIAC PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	RADIART PART No.	
M1	Interrupter	6.3V	115v	7239124	5301	859	5301	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			PONTIAC PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	SFE	14 Amp.	147685		307014 (SFE-14 Amp.)		SFE-14	

MISCELLANEOUS

ITEM No.	PART NAME	PONTIAC PART No.	NOTES
M3	Dial Light	55	Type #55
M4	"On" Indicator Lamp	44	Type #44
M5A	Clutch Disc	7258072	Part of Tuning Assy.
B	Gear & bushing	7256495	Part of Tuning Assy.
C	Worm Gear & bracket	7262445	Part of Tuning Assy.
D	Spring (Clutch)	7258756	Part of Tuning Assy.
E	Core Guide Bar Assy.	7262462	Part of Tuning Assy.
M6	Spark Plate	1219768	
A5, A6	Trimmer Cap.	7262454	RF and Oscillator (Dual)
A7	Trimmer Cap.	7262457	Antenna
	Escutcheon Assy.	7263103	
	Dial Glass	7262478	
	Pointer Assy.	7262460	
	Push Button	1220181	(5 Used)
	Knob	516946	Tone
	Knob	516948	Off/On/Volume and Tuning (2 used)
	Knob	516945	Dummy

PUSH BUTTON ADJUSTMENT

Turn set on and allow warm up period of 15 minutes.

Release push button by pulling to the right and outwards.

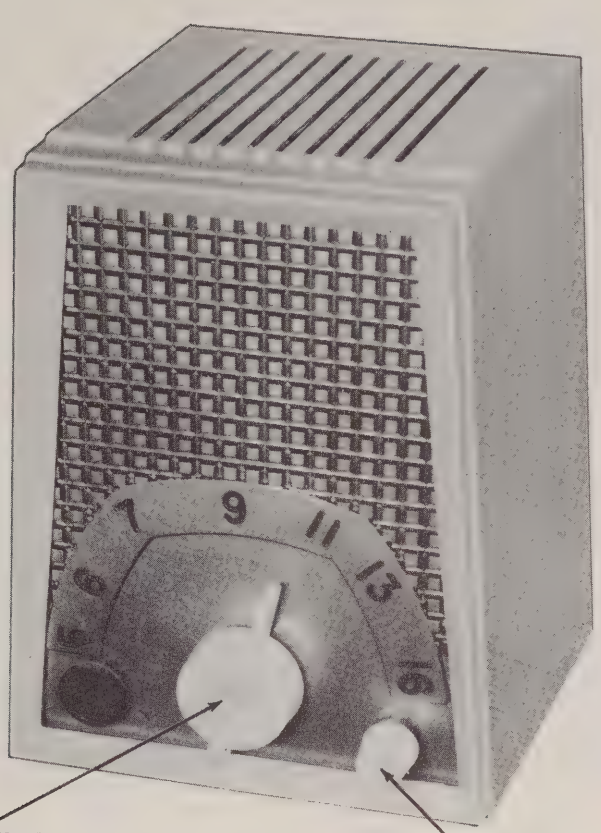
Tune manually to the desired station.

Press push button all the way in to lock.

Repeat above procedure for remaining push buttons.

PROPERTY OF
L. F. [illegible]

REGAL
MODELS C473, 472



REGAL
MODELS C473, 472

TRADE NAME	Regal Models C473, 472
MANUFACTURER	Regal Electronics Corp., 605 W. 130th. St., New York, N.Y.
TYPE SET	AC-DC Operated AM Superheterodyne Receiver (Model C473 with Electric Clock operates on AC only)
TUBES (Five)	Types 12BE6 Conv., 12BA6 IF Amp., 12AT6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-DC (Model C473 AC only) RATING .25 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1680KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer parallel with base of dial. Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400∿Mod)	Tuning gang fully opened	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1680KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. If range of A5 is insufficient, adjust trimmer to opposite end of stator plates.
3.		"	1500KC	Tune to 1500KC signal	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		REGAL PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det-AVC-AF Amp.	12AT6	12AT6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	7BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	REGAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	50	150	925212	PRS150/50-50		EZ5515		2N521	TVA-2453	Red Green
B	50	150								
C2	.05	200	50-146	P288-05	D6-503	PJ2S5		PT415	2TM-S5	
C3	.02	400	50-113	P488-02	D6-203	PTE4D2		PT412	4TM-S2	Note 2
C4	100		55-102	S1100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C5A	250		♦50-142		♦PC-150		♦1408-01		♦103C4	
B	.002									
C	250									
D										
E	.005									
C6	.01	400	50-102	P488-01	D6-103	PTE4S1	811-01	PT411	4TM-S1	
C7	.047	400	50-146	489ZX-05		PJ4S5		PT415	4TM-S5	
C8	.25	600	50-120	684-25		PTE6P25		PT6025	6TM-P25	Note 1

♦ Items C5A, C5B, C5C, C5D, C5E, R5A, R5B and R5C are combined in one unit.
When replacing, C5C and C5D should total 250MMF.
Note 1. Some Models use a .2 Ⓐ 600V in this application.
Note 2. Not used in all Models.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	REGAL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	1Meg	½	20-102X	Q13-137	AG-63-Z	BSK-70-S	U-53	Volume-see note
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB-2	Not Req.	US-27	Attach to R1A

Note: Some Models may use alternate control (part #20-134)

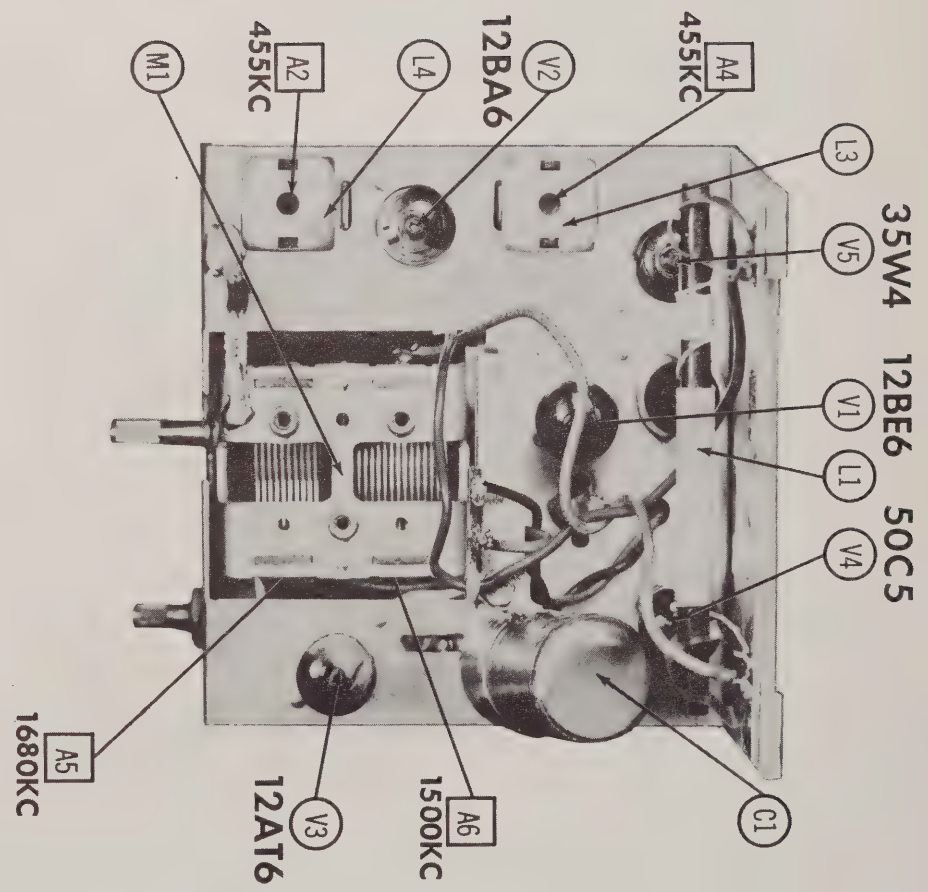
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	REGAL PART No.	IRC PART No.	
R2	20KΩ	½	65-105		
R3	220Ω	½	65-159	BTS-220	
R4	2.2Meg	½	65-110	BTS-2.2Meg	
R5A	6.8Meg	½	♦50-142	BTS-6.8Meg	
B	470KΩ	½		BTS-470K	
C	470KΩ	½		BTS-470K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	REGAL PART No.	IRC PART No.	
R6	150Ω	½	65-103	BTS-150	
R7	24Ω	½	65-101		Note 1
R8	24Ω	½	65-101		
R9	1200Ω	2	65-217	BTB-1200	
R10	1Meg	½		BTS-1Meg	Note 2
R11	270KΩ	½		BTS-270K	Note 3

Note 1. Not used in Model 472 .
Note 2. Not used in all Models.
Note 3. Some Models may use a 220KΩ resistor in this application.
♦ Items R5A, R5B, R5C, C5A, C5B, C5C, C5D, C5E are combined in one unit.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		REGAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.3KΩ	3.2Ω	150Ω	.5Ω		A-3876	A-2928	RO-302	S-1X	

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	REGAL PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.2Ω		ST-113 Mod. P4-X	4A07	

COILS (RF-IF)

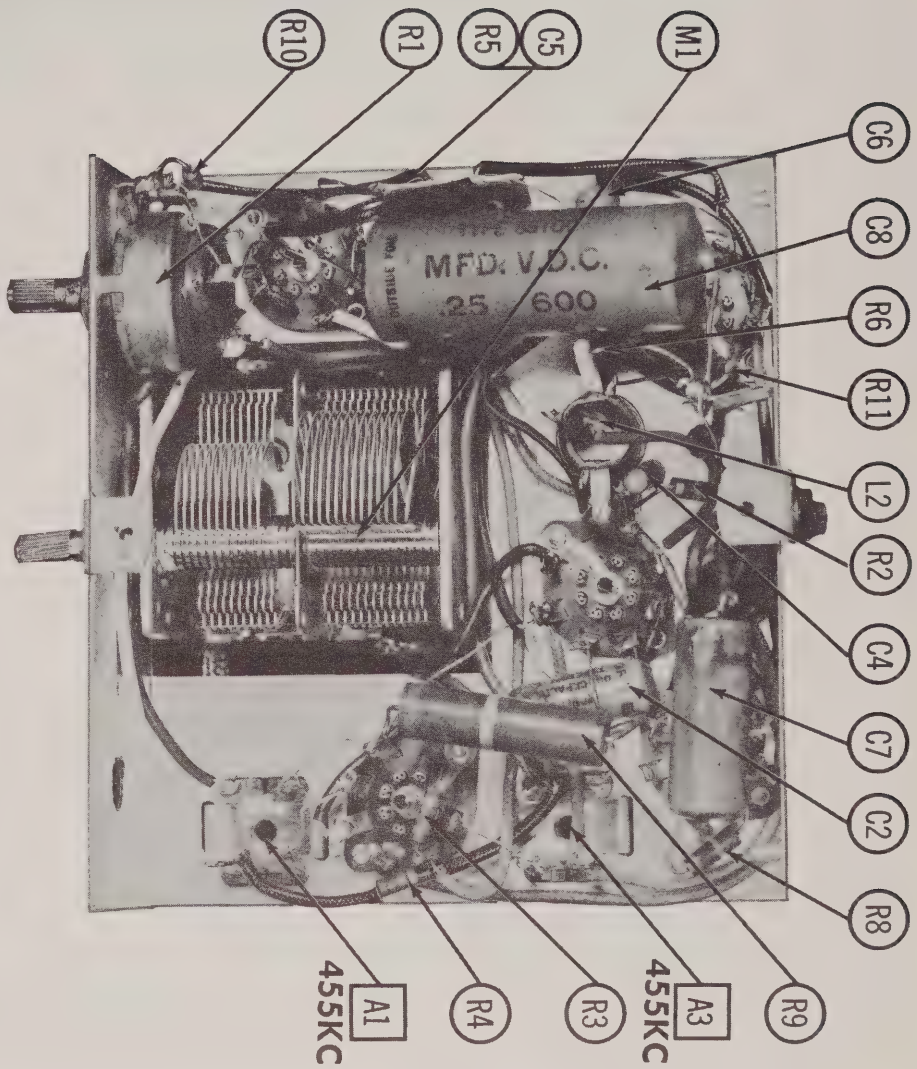
ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	REGAL PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Coil	.4Ω		30-262				
L2	Osc. Coil	5.5Ω		30-127			71-Osc. *	Tapped @ .7Ω
L3	Input IF	15Ω	15Ω	30-154	16-6758	BC-352	12-C1	
L4	Output IF	15Ω	15Ω	30-154	16-6758	BC-353	12-C2	

* Drill mounting hole.

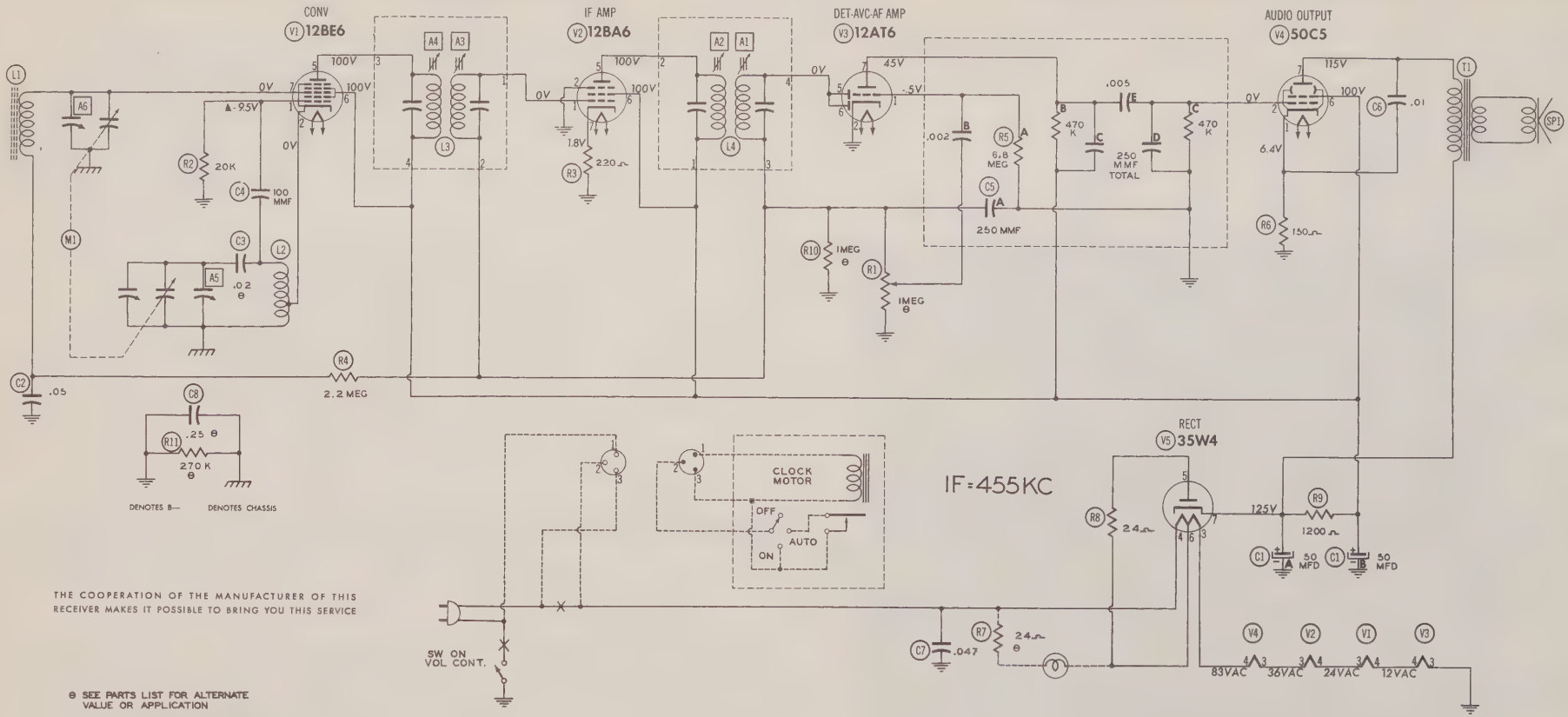
MISCELLANEOUS

ITEM No.	PART NAME	REGAL PART No.	NOTES
M1	Tuning Cap.	40-143A	40-442MMF, 38-225MMF

CHASSIS—BOTTOM VIEW



REGAL MODEL C473



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.7Ω	24Ω	12Ω	†1.2KΩ	†1.2KΩ	2.7Meg
V 2	12BA6	2.7Meg	0Ω	36Ω	24Ω	†1.2KΩ	†1.2KΩ	220Ω
V 3	12AT6	6.8Meg	0Ω	0Ω	12Ω	500KΩ	500KΩ	†470KΩ
V 4	50C5	150Ω	470KΩ	36Ω	85Ω	470KΩ	†1.2KΩ	†150Ω
V 5	35W4	†0Ω	0Ω	85Ω	120Ω	144Ω	INF	500KΩ

▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 7 OF V5.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PROPERTY
L. F. ANKENBRANDT
DO NOT REMOVE IT.

ROLAND
MODELS 5X1, 5X2

ROLAND
MODELS 5X1, 5X2

TRADE NAME	Roland Models 5X1, 5X2
MANUFACTURER	Roland Radio Corp., 12-30 Anderson Ave., Mt. Vernon, N.Y.
TYPE SET	AC Operated Radio-Phono Combination Superheterodyne Receiver with 3 Speed Automatic Record Player
TUBES (Five)	Types 12BE6 Conv., 12BA6 IF Amp., 12AT6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycles — RATING .22 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1620 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400~ Mod)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1620KC	"	"	A5	"
3.		Loop	1400KC	Tune to 1400KC signal	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

FOR SERVICE INFORMATION ON RECORD CHANGER UNIT, SEE V-M MODEL 950, PHOTOFACT SET #107, FOLDER 13 OR RECORD CHANGER MANUAL CM-3.

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
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PARTS LIST AND DESCRIPTIONS

ROLAND MODEL 5X1

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		ROLAND PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det-AVC-AF Amp.	12AT6	12AT6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	ROLAND PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	40	150		PRS150/50-30-20		EDL44215		3N532	TVA-3448	
B	40	150								
C	20	150								
C2	.05	400		P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C3	180			1468-0002	D6-181	TM5T2	GP2K-181	UC532	5GA-T18	
C4	.02	400		P488-02	DD-203	PTE4S2		PT412	4TM-S2	
C5	180			1468-0002	D6-181	TM5T2	GP2K-181	UC532	5GA-T18	
C6	.02	400		P488-02	DD-203	PTE4S2		PT412	4TM-S2	
C7	.002	600		P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C8	.02	400		P488-02	DD-203	PTE4S2		PT412	4TM-S2	
C9	.02	400		489ZX-02		PJ4S2			4TM-S2	
C10	.1	400		P488-1		PTE4P1		PT401	4TM-P1	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	ROLAND PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	½	BA022-033	QJ-477R*			UF55A	Volume-Panel
B	500KΩ	½					UR55L	Tone-Rear
C	Switch						US-26	Attach to R1B

* CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B13-133 & P1-106 (Panel) B11-133 & R1-122 (Rear) & SWITCH 76-1.

RESISTORS

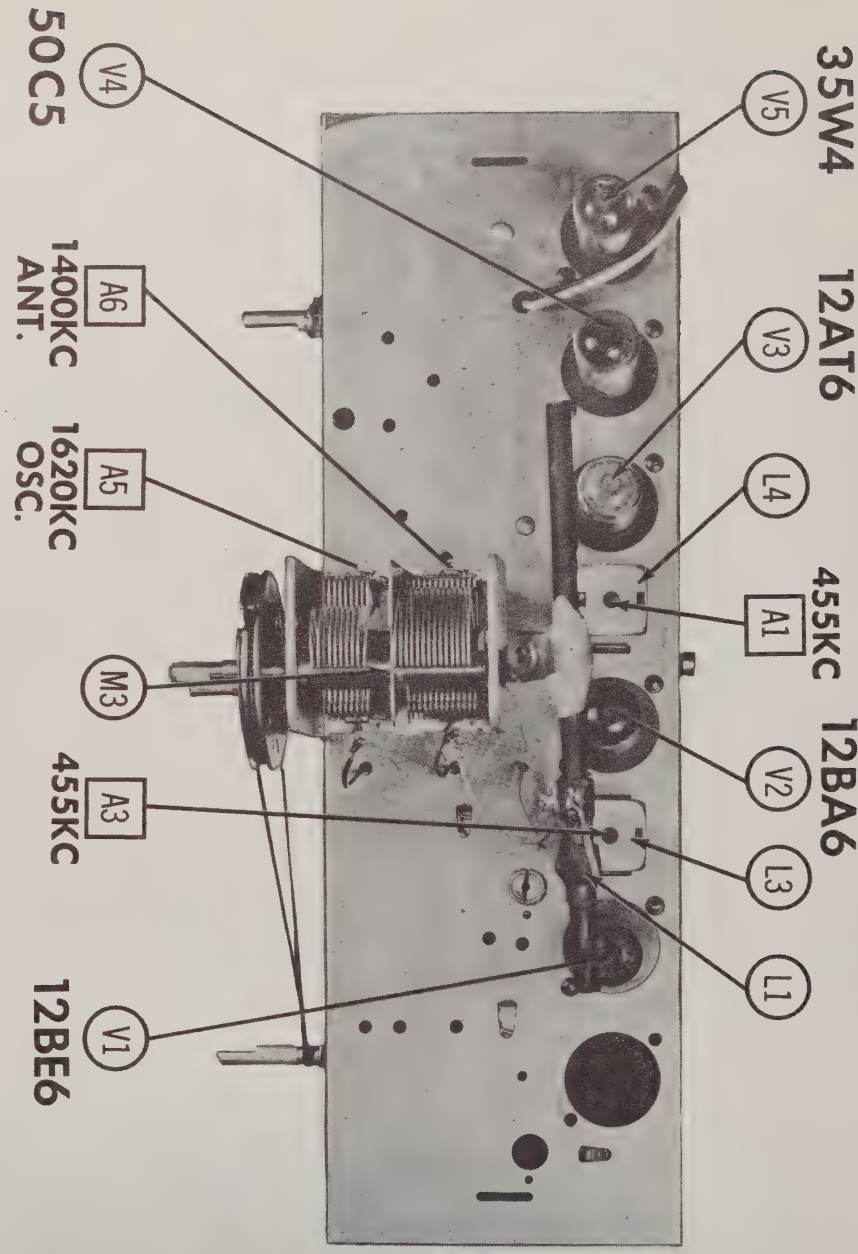
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ROLAND PART No.	IRC PART No.	
R2	22KΩ	½		BTS-22K	
R3	220Ω	½		BTS-220	
R4	2.2Meg	½		BTS-2.2Meg	
R5	4.7Meg	½		BTS-4.7Meg	
R6	220KΩ	½		BTS-220K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ROLAND PART No.	IRC PART No.	
R7	150Ω	1		BTA-150	
R8	18Ω	½			
R9	330Ω	1		BTA-330	
R10	2200Ω	1		BTA-2200	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		ROLAND PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.4KΩ	3Ω	172Ω	.47Ω		A-3876 ①	A-2928 ①	RO-302 ①	S-1X ①	① Bend mtg. tabs down, file out slots, mount on original mtg. bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	ROLAND PART No.	JENSEN PART No.	QUAM PART No.	
SP1	5"	PM	3Ω		ST-105 Mod. P5-X	5A1	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	ROLAND PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Coil	.9Ω						
L2	Osc. Coil	.6Ω	6Ω				69-Osc.	
L3	Input IF	22Ω	22Ω	LF-50	16-6758	BC-352	12-C1	
L4	Output IF	22Ω	22Ω	LF-50	16-6758	BC-353	12-C2	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA							REMARKS
	ROLAND PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1		LQD-1J	Q Q-33			96-0	0-1 0-3	

ASTATIC AND ELECTRO-VOICE NEEDLE LISTING SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

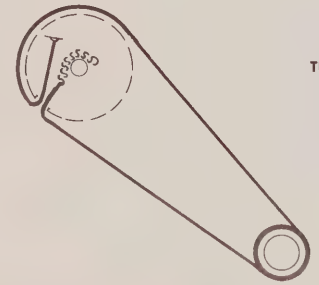
PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	ROLAND PART No.	WALCO PART No.	JENSEN PART No.	
M2		W-2A or W-2S & W-2MGA or W-2MGS	A-80 or A-81 & A-80LP or A-81LP	

MISCELLANEOUS

ITEM No.	PART NAME	ROLAND PART No.	NOTES
M3	Tuning Cap.	CV20A	29-457MMF, 32-190MMF
M4	Switch		Radio-Phono Selector

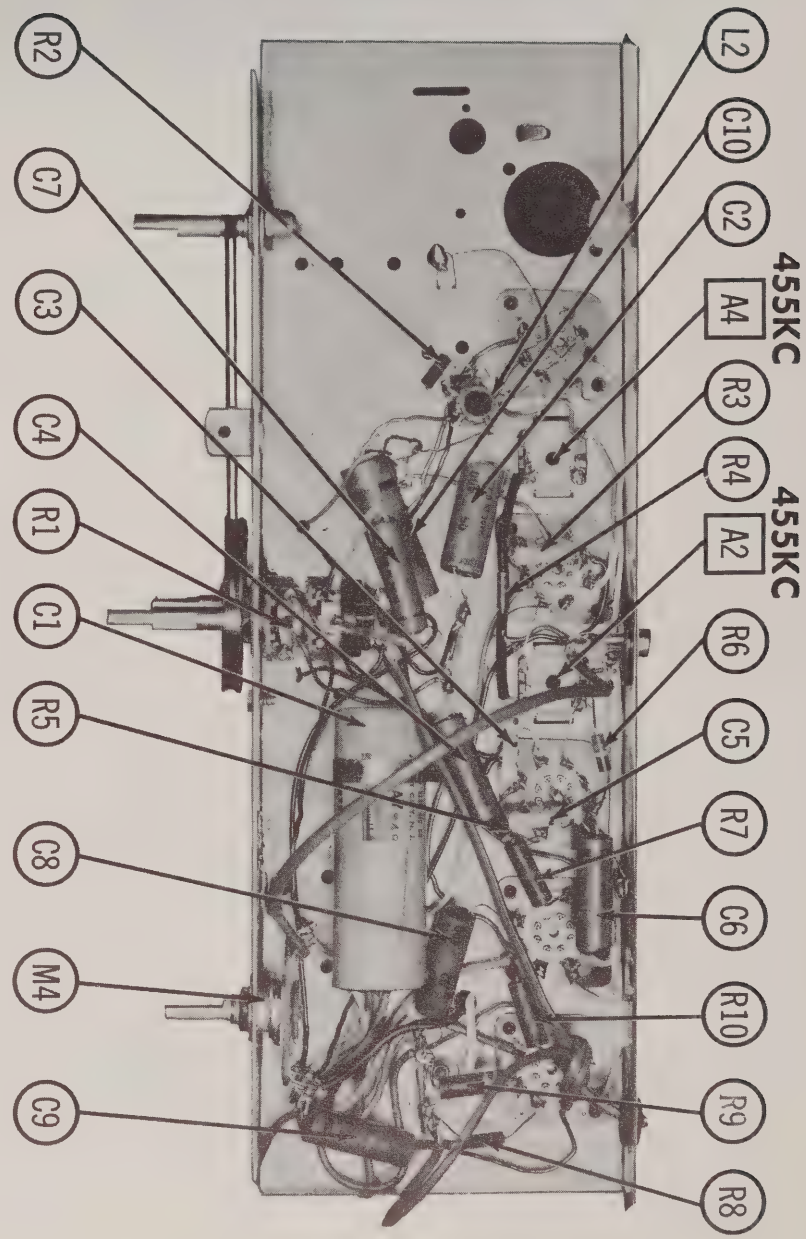


TUNING GANG FULLY CLOSED

2 1/2 TURNS

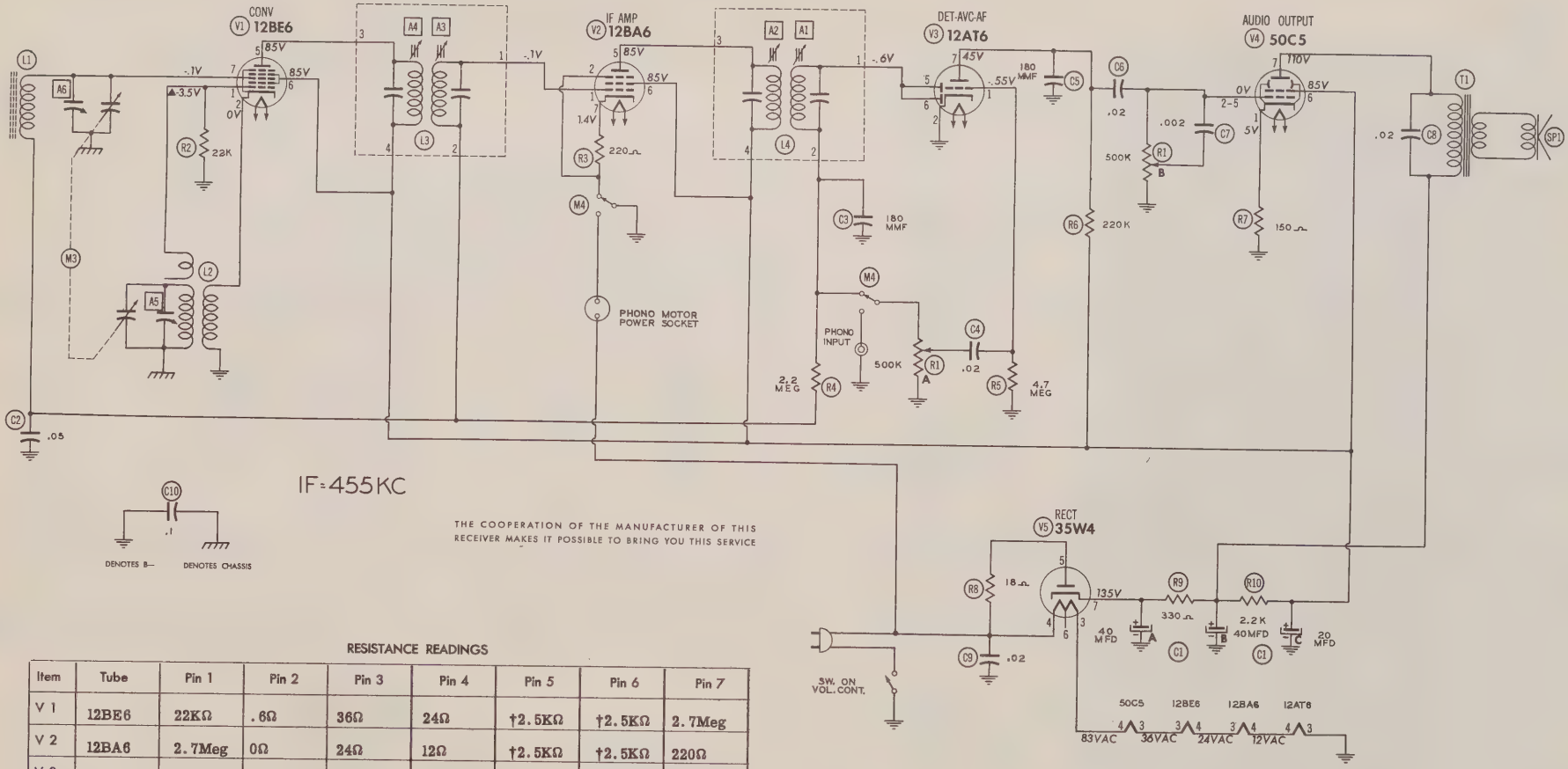
DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



ROLAND MODEL 5X1

ROLAND MODEL 5X1



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.6Ω	36Ω	24Ω	†2.5KΩ	†2.5KΩ	2.7Meg
V 2	12BA6	2.7Meg	0Ω	24Ω	12Ω	†2.5KΩ	†2.5KΩ	220Ω
V 3	12AT6	4.7Meg	0Ω	0Ω	12Ω	500KΩ	500KΩ	†220KΩ
V 4	50C5	150Ω	500KΩ	36Ω	85Ω	500KΩ	†2.5KΩ	†500Ω
V 5	35W4	†330Ω	INF	85Ω	120Ω	138Ω	INF	200KΩ

ALL MEASUREMENTS TAKEN IN "RADIO" POSITION
▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 7 OF V5

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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217-13

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

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SCOTT MODELS 817C, T, 821C, CB, D, T, TB (Ch. 9036, 9037, 9038, 9039)

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SCOTT MODELS 817C, T, 821C, CB, D, T, TB (Ch. 9036, 9037, 9038, 9039)

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SCOTT MODEL 821C (Ch.9038)

TRADE NAME	Scott Models 817C, 817T, 821C, 821CB, 821D, 821T, 821TB (Ch. 9036, 9037, 9038, 9039)
MANUFACTURER	Scott Radio Laboratories, Inc., 1020 N. Rush St., Chicago 11, Ill.
TYPE SET	Television Receiver
TUBES	Twenty
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 1.4 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13, Video IF 26.1MC, Sound IF 21.6MC (Intercarrier)

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SCOTT MODELS 817C, T, 821C, CB, D, T, TB (Ch. 9036, 9037, 9038, 9039)

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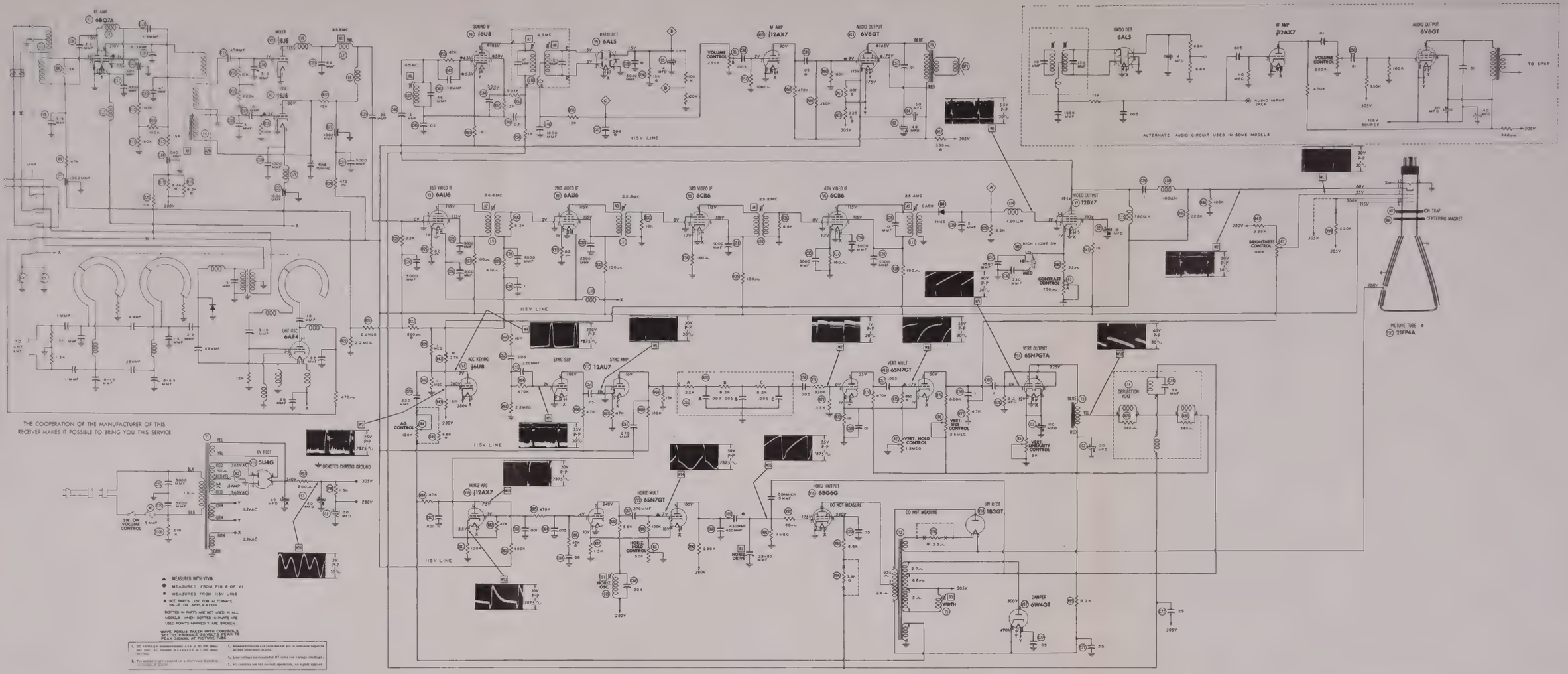

SCOTT MODELS 817C, T, 821C, CB, D, T, TB (Ch. 9036, 9037, 9038, 9039)

SCOTT MODELS 817C, T, 821C, CB, D, T, TB (Ch. 9036, 9037, 9038, 9039)

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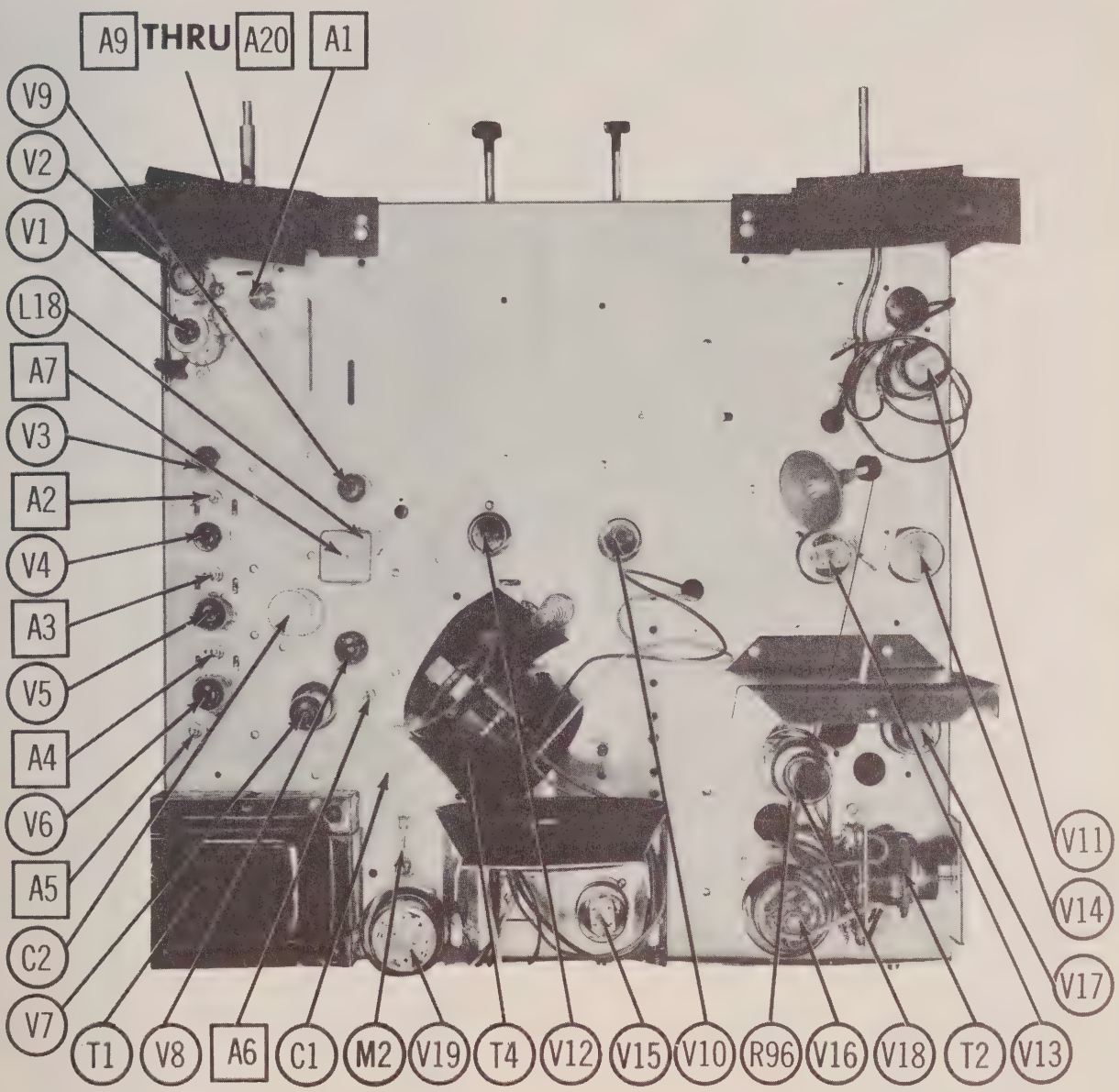
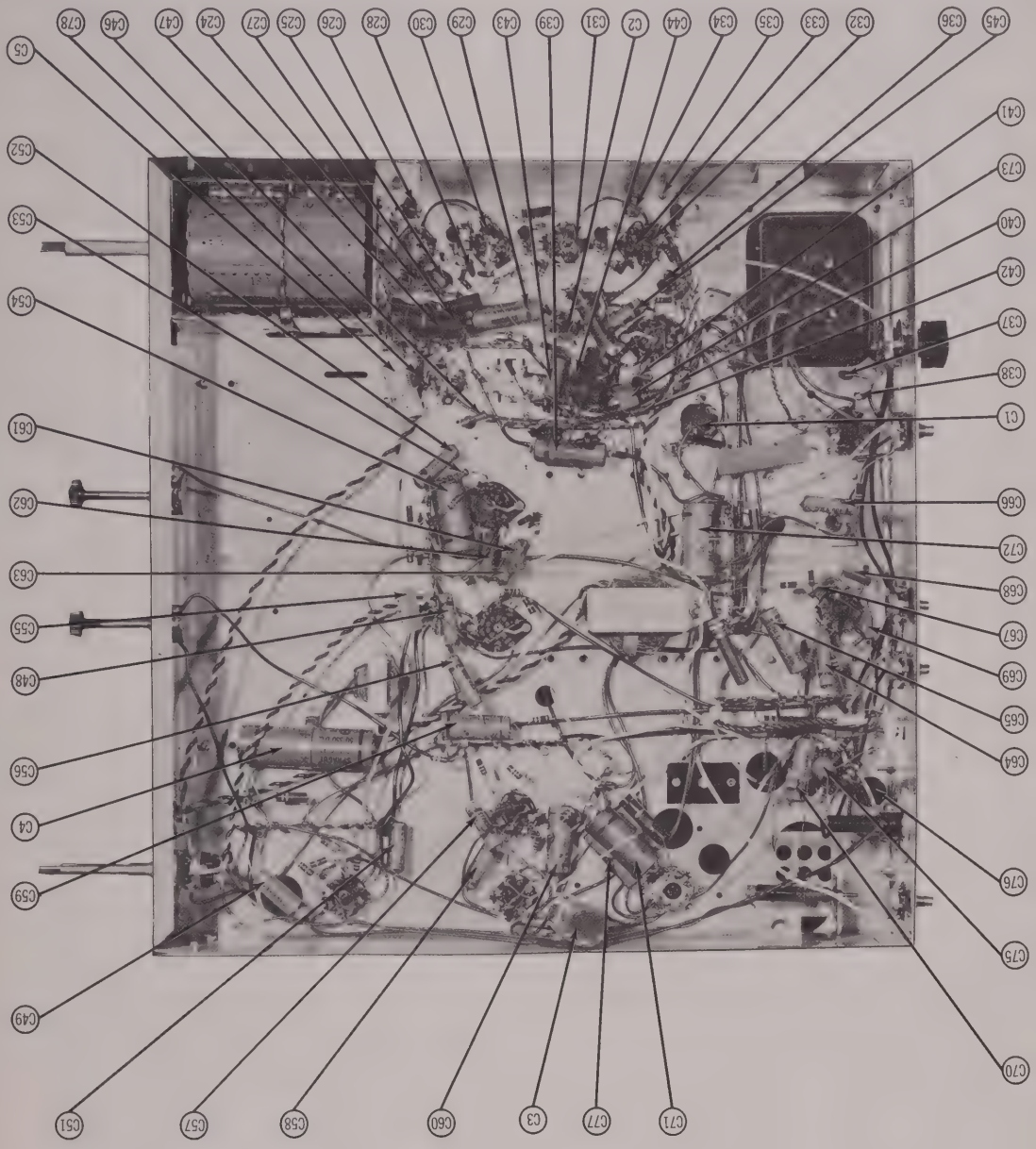
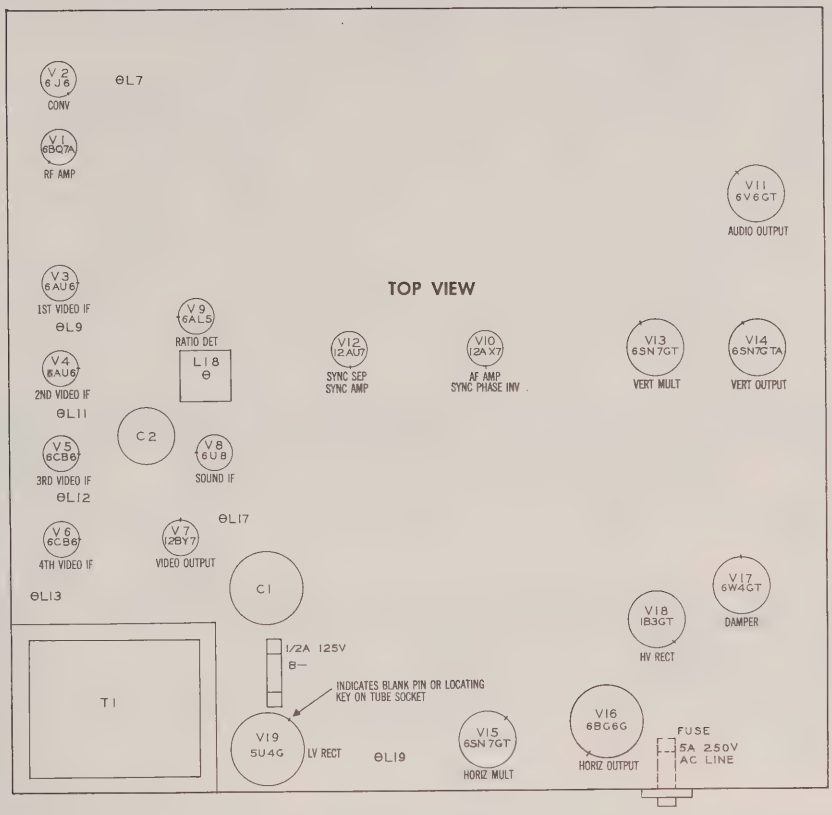


CHASSIS TOP VIEW

CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V19, Fuse (M1, M2)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V6, V11
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V7, V20
Has pic, no sound - V8, V9, V10, V11
Overloaded picture - V8

SYNC FAILURE
No vert. sync - V12, V13, V14
No horiz. sync - V10, V12, V15
No vert. or horiz. sync - V12

SWEEP FAILURE
No raster, has sound - V15, V16, V17, V18, V20
No vertical deflection - V13, V14
Poor vert. linearity or foldover - V13, V14
Poor horiz. linearity or foldover - V15, V16, V17
Narrow picture - V15, V16, V17, V18, V19
Vert. off freq. - V12, V13, V14
Horiz. off freq. - V10, V12, V15

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis. Do not remove horizontal multivibrator tube to disable the high voltage. Individual receivers may employ one of two variations in the Video IF strip.
The first may be identified by the values of the grid load resistors on the last two IF amplifier tubes (R33 and R36), both being 6800Ω.
Alignment frequencies for this variation will be indicated in the tables by an asterisk (*).
In the other variation R33 is 10000Ω while R36 remains 6800Ω. Also, in this variation, a 470Ω resistor, R28 decoupled to ground by a .001MFD capacitor is in series with the grid return to the AGC line. Alignment frequencies for this second variation will appear in the tables unmarked.

VIDEO IF ALIGNMENT

Remove the converter tube, V2, from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded side of C29 and the positive side to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	25.8MC *25.9MC	Any	DC probe to point (A). Common to chassis.	A1	Adjust for maximum deflection. Adjust generator output to maintain 1 volt at VTVM.
2.	"	"	24.4MC *24.3MC	"	"	A2	"
3.	"	"	22.8MC *23.1MC	"	"	A3	"
4.	"	"	23.2MC *22.9MC	"	"	A4	"
5.	"	"	25.4MC *25.7MC	"	"	A5	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	21.6MC 22.7MC 26.1MC	Any	Vert. Amp. to point (A). Low side to chassis.		Check for response curve similar to Fig. 1. If necessary, retouch A1 thru A5 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from point (B) to chassis. The junction of these two resistors is alignment point (D) as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.01MFD	High side to point (A). Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point (B). Common to chassis.	A6, A7	Adjust for maximum meter deflection. Attenuate generator output to maintain less than 5 volts of VTVM.
8.	"	"	"	"	DC probe to point (C). Common to point (D).	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.01MFD	High side to point (A). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point (B). Low side to chassis.	A6, A7	Disconnect stabilizer capacitor C5. Adjust for curve of maximum amplitude and symmetry as in Fig. 2.
8.	"	"	"	"	"	Vert. Amp. to point (C). Low side to chassis.	A8	Reconnect capacitor C5. Adjust so that 4.5 MC occurs at center of crossover lines as in Fig. 3. Slightly retouch A7 for maximum amplitude and straightness of crossover lines.

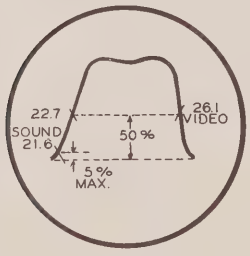


FIG. 1

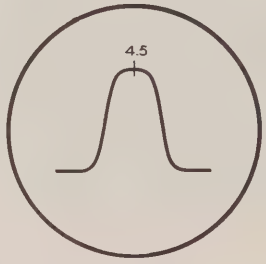


FIG. 2

ALIGNMENT INSTRUCTIONS (cont)

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket. Connect bias battery as under Video IF Alignment. The channel oscillator adjustment screws are reached thru a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms. Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. to point A . Low side to chassis.	A9	Adjust to place video marker at 50% on high frequency side of video IF response curve as in Fig. 4.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A10	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A11	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A12	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A13	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A14	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A15	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A16	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A17	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A18	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A19	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A20	

RF AND MIXER ALIGNMENT

The RF and Mixer portion of this receiver has been correctly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

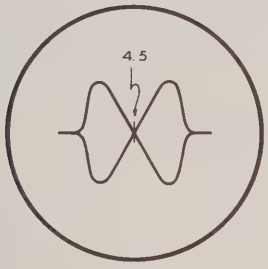


FIG. 3

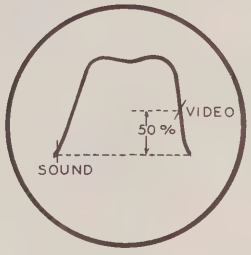
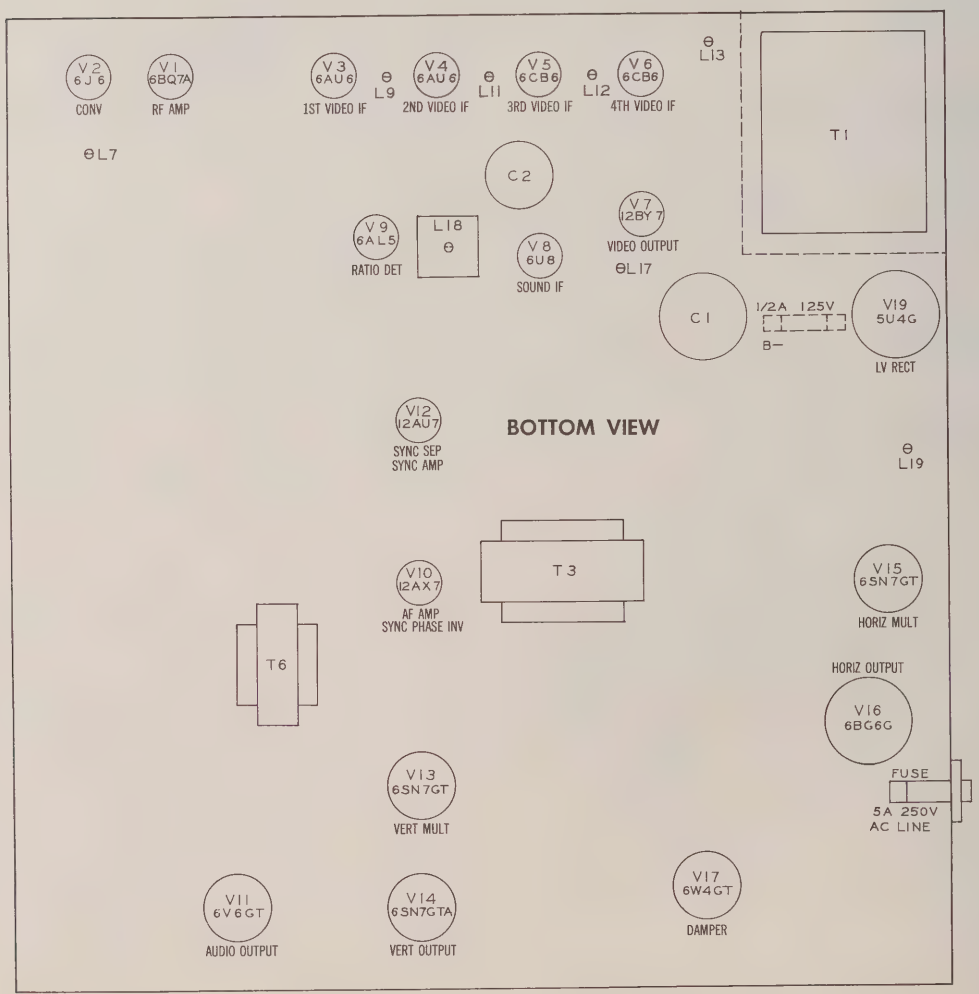


FIG. 4

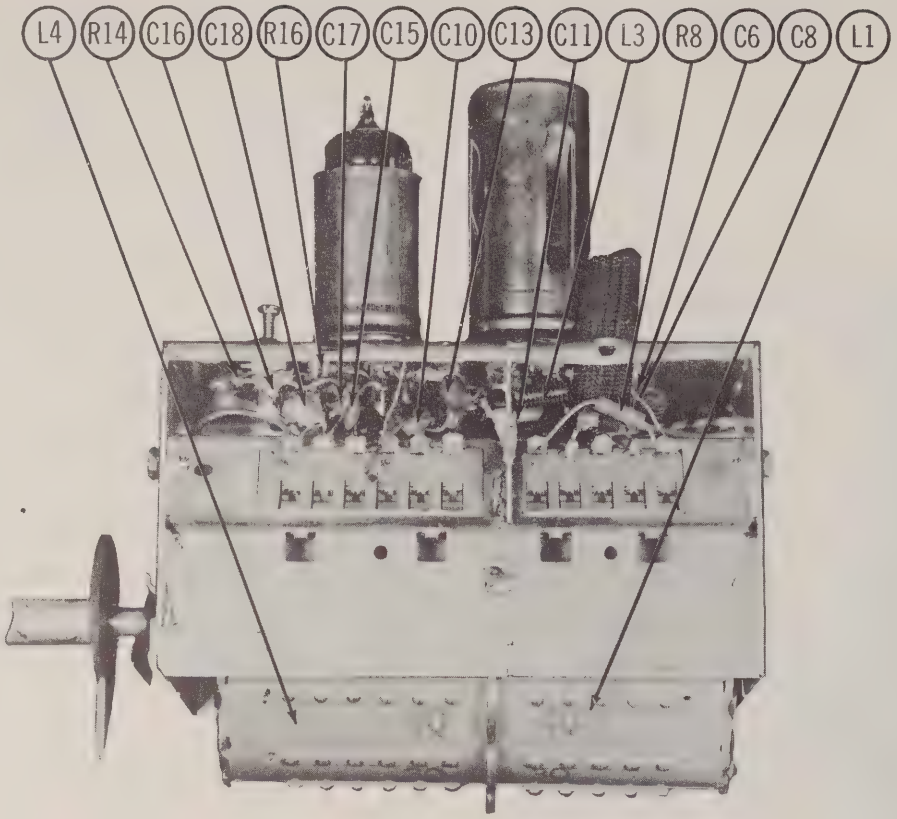
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BQ7A	INF	1.4Meg	0Ω	.1Ω	0Ω	†5.3KΩ	†175KΩ	INF	0Ω
V 2	6J6	‡15.5KΩ	‡470Ω	.1Ω	0Ω	230KΩ	10KΩ	0Ω		
V 3	6AU6	1.4Meg	0Ω	0Ω	.1Ω	‡100Ω	‡100Ω	82Ω		
V 4	6AU6	1.4Meg	0Ω	0Ω	.1Ω	‡100Ω	‡100Ω	82Ω		
V 5	6CB6	.1Ω	180Ω	0Ω	.1Ω	‡100Ω	‡100Ω	0Ω		
V 6	6CB6	.1Ω	180Ω	0Ω	.1Ω	‡100Ω	‡100Ω	0Ω		
V 7	12BY7	200Ω	8.2KΩ	0Ω	.1Ω	.1Ω	0Ω	†6.2KΩ	‡1KΩ	0Ω
V 8	6U8	850KΩ	‡48KΩ	‡13KΩ	‡70KΩ	‡70KΩ	†1.2KΩ	‡1KΩ	†1.7KΩ	†3.5KΩ
V 9	6AL5	INF	INF	.1Ω	0Ω	0Ω	INF	13.6KΩ		
V 10	12AX7	†470KΩ	10Meg	0Ω	.1Ω	.1Ω	47KΩ	147KΩ	100KΩ	0Ω
V 11	6V6GT	INF	‡70KΩ	†870Ω	†530Ω	†120KΩ	INF	‡70KΩ	50KΩ	
V 12	12AU7	‡40K	0Ω	47KΩ	.1Ω	.1Ω	‡4.7KΩ	2.7Meg	0Ω	0Ω
V 13	6SN7GT	1.7Meg	■2.7Meg	1KΩ	33KΩ	■470KΩ	1KΩ	.1Ω	0Ω	
V 14	6SN7GTA	2.2Meg	■9.3KΩ	850Ω	2.2Meg	■9.3K	850Ω	.1Ω	0Ω	
V 15	6SN7GT	620KΩ	†7.3KΩ	1.5KΩ	125KΩ	†220KΩ	1.5KΩ	0Ω	.1Ω	
V 16	6BG6G	2.5Ω	0Ω	0Ω	47KΩ	1Meg	INF	.1Ω	†7KΩ	Top Cap ■24Ω
V 17	6W4GT	INF	INF	1.5Meg	INF	†210Ω	INF	‡70KΩ	‡ 70KΩ	
V 18	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap ■260Ω
V 19	5U4G	INF	50KΩ	INF	53Ω	INF	50Ω	INF	50KΩ	
V 20	21FP4	0Ω	30KΩ	PIN 6 †0Ω	PIN 10 †220KΩ	PIN 11 †80KΩ	PIN 12 .1Ω			

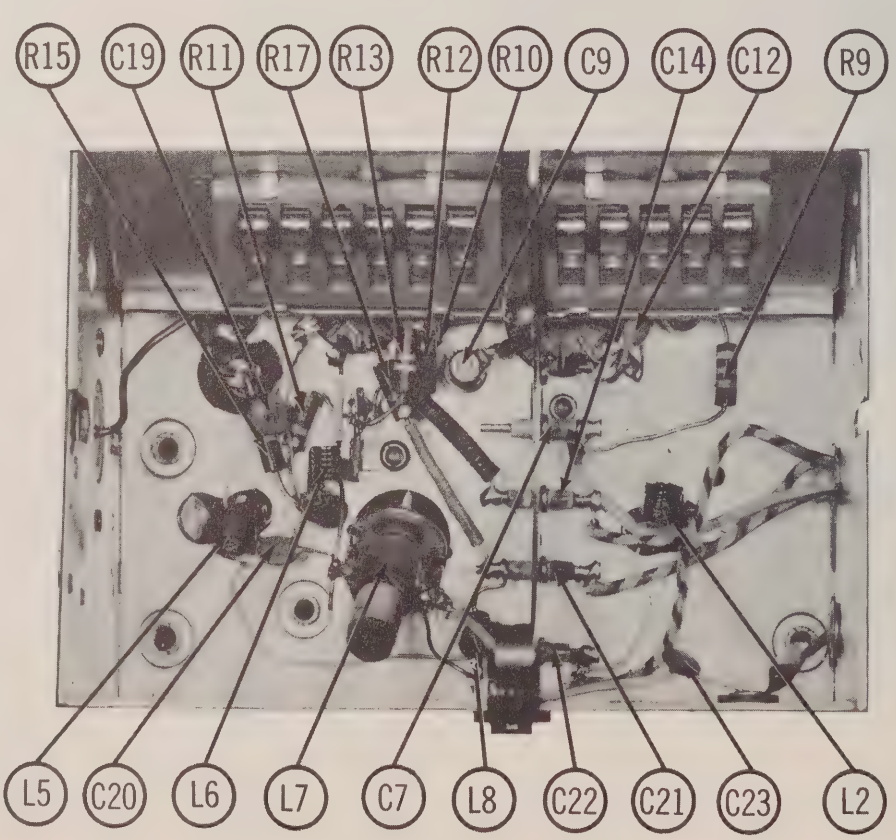
† MEASURED FROM PIN 2 OF V19.
‡ MEASURED FROM 115V LINE.
■ MEASURED FROM PIN 3 OF V17.



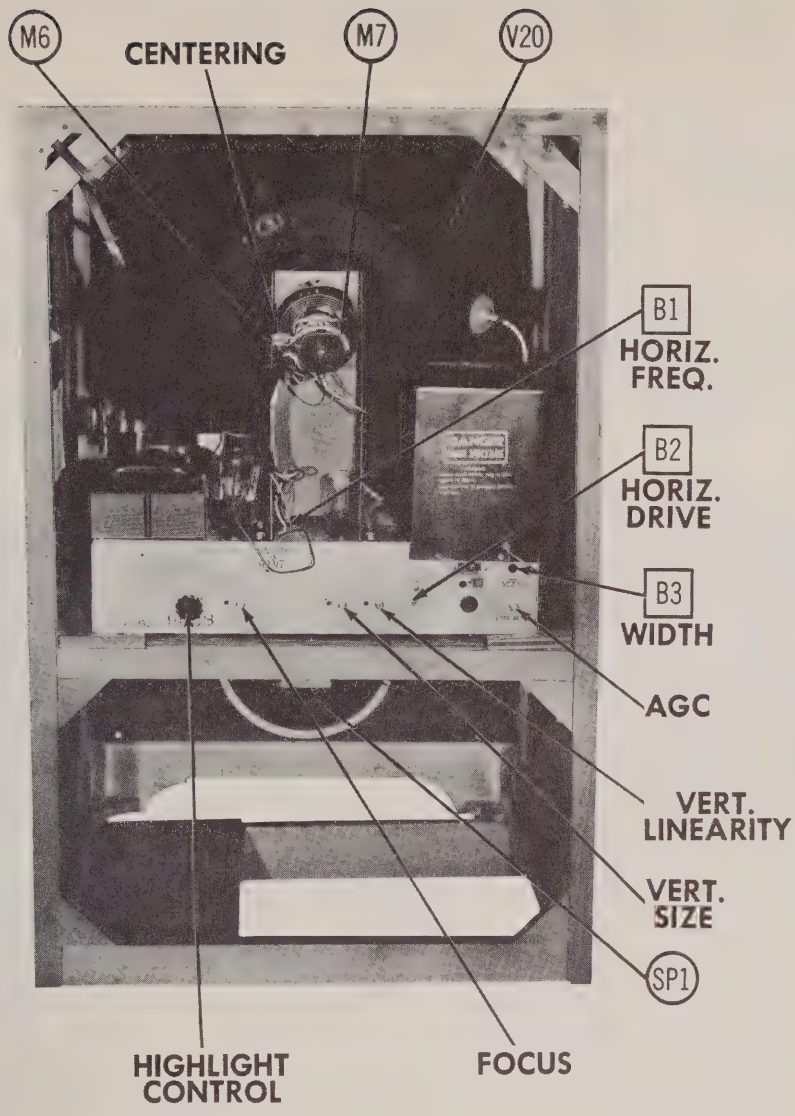
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET—REAR VIEW

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HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Set the horizontal hold control at mid-position and adjust the horizontal oscillator slug (B1) until the picture synchronizes horizontally.

Adjust the horizontal drive trimmer (B2) counter clockwise as far as possible without the presence of vertical white lines or compression of the center of the picture.

Adjust the width slug (B3) for a picture slightly wider than necessary to fill the picture mask horizontally.

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL

LOSS OF SWEEP

See "Loss of High Voltage".

INSUFFICIENT SWEEP

Check by substitution V15, V16, V17 and V19. Check adjustment of width coil (B3), and horizontal drive trimmer (B2). Check waveform at W15.

If Satisfactory	If Unsatisfactory
Check C70, C71, C72, T2, T4A and other associated components.	Check C67, C68, C69 and other components associated with V15 and V16.

DRIVE LINES

Check by substitution V15, V16 and V17. Check adjustment of horizontal drive (B2). Check C68, C69, C70, C71, C72, T2 , T4A and other associated components.

COMPRESSED LEFT SIDE

Check by substitution V15, V16 and V17. Check adjustment of width (B3) and horizontal drive (B2). Check T2, T4A, C70, C71 and other associated circuit components.

FOLDS

Check by substitution V15, V16 and V17. Check horizontal drive (B2). Check C71, C72, T2, T4A and other associated components.

XMAS TREE EFFECT

Check by substitution V15. Check L19 for shorted turns. Check C66 and C67 for leakage.

VERTICAL

LOSS OF SWEEP

Check by substitution V13 and V14. Check waveform at W9.

If Satisfactory	If Unsatisfactory
Check T3 and T4B. Check C3A and C3B. Check R5 for open.	Check C57, C59 and C60. Check other associated components.

INSUFFICIENT SWEEP

Check by substitution V13 and V14. Check adjustment of height and vertical linearity controls. Proceed as outlined under "Loss of Sweep".

COMPRESSED AT BOTTOM

Check by substitution V13 and V14. Check T3, T4B, C3A, C3B and other associated components.

COMPRESSED AT TOP

Check by substitution V13 and V14. Check C59, C60 and other associated components.

FOLDS

Check by substitution V13 and V14. Check components associated with these stages especially T3 and T4B.

SYNC

HORIZONTAL

LOSS OF SYNC

Check by substitution V10 and V15. Check components associated with these stages especially C61, C62, C63 and C64.

CRITICAL HOLD

Check by substitution V8, V10, V15 and V12. Check C64, C65 and other components associated with V15. Check video amplifier, sync separator and AGC circuit components. Check video IF and detector stages for signal overload and sync clipping.

PULLING PICTURE

Check by substitution V10, V12, V15 and V16. Check components associated with these stages. Check video IF and amplifier stages for heater to cathode leakage.

VERTICAL

LOSS OF SYNC

Check by substitution V12 and V13. Check vertical integrator network, C56, C57 and C58. Check other components associated with these stages.

CRITICAL HOLD

Check by substitution V12 and V13. Check vertical integrator network and all sync coupling capacitors. Check video amplifier and sync separator stages for signal overload and for sync compression.

TRIGGERING

Check by substitution V12, V13 and V14. Check circuit near these stages for filament lead dress.

VIDEO

LOSS OF VIDEO

Check C39, L16, R45, R46 and picture tube. Check components associated with V20.

SOUND BARS

Check adjustment of local oscillator, Check 4.5MC take-off trap adjustment (A6).

POOR RESOLUTION

Check by substitution V1, V2, V3, V4, V5, V6 and V7. Check bypass and coupling capacitors associated with these stages. Check video IF alignment.

POOR CONTRAST

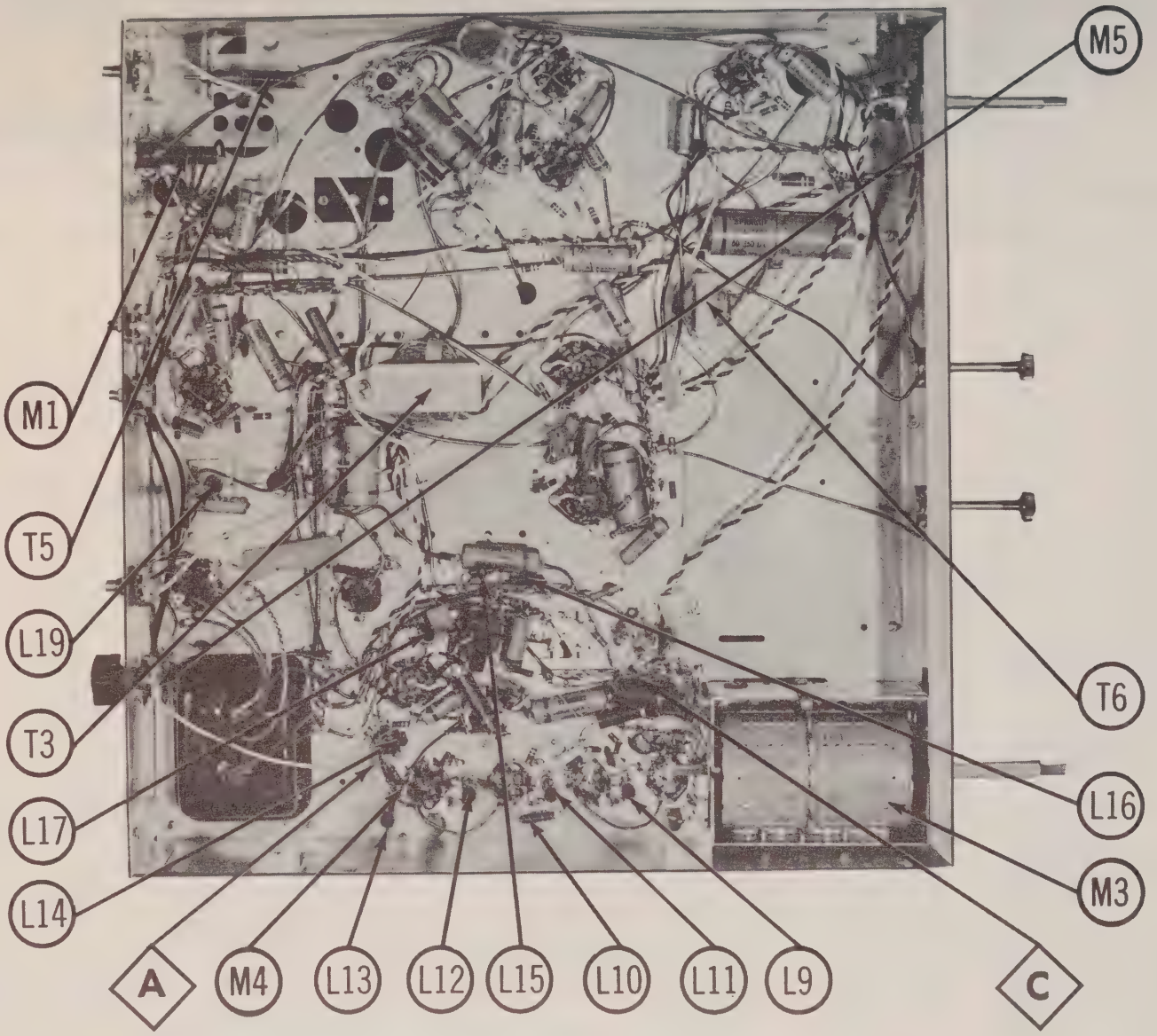
Check by substitution V7. Check video detector crystal and components associated with V7, especially all bypass and coupling capacitors.

SMEAR

Check V7 by substitution. Check video detector crystal and assembly. Check R41 and R45 for change of value. Check L15 and L16. Check C36, C39 and C2B. Check picture tube and associated components.

ONE BLACK BAR ACROSS PICTURE

Check tuner, video IF and video amplifier tubes for heater to cathode leakage.



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SCOTT PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1	RF Amplifier	6BQ7A	6BQ7A	9AJ	
V2	Converter	6J6	6J6	7BJ	
V3	1st. Video IF Amp.	6AU6	6AU6	7BK	
V4	2nd. Video IF Amp.	6AU6	6AU6	7BK	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	4th. Video IF Amp.	6CB6	6CB6	7CM	
V7	Video Output	12BY7	12BY7	9BF	
V8	Sound IF Amp. - AGC Keying	6U8	6U8	8AE	
V9	Ratio Detector	6AL5	6AL5	6BT	
V10	AF Amplifier - Horiz. AFC	12AX7	12AX7	9A	
V11	Audio Output	6V6GT	6V6GT	7E	
V12	Sync Separator - Sync Amplifier	12AU7	12AU7	9A	
V13	Vert. Mult.	6SN7GT	6SN7GT	6BD	
V14	Vert. Output	6SN7GTA	6SN7GTA	6BD	
V15	Horiz. Mult.	6SN7GT	6SN7GT	6BD	
V16	Horiz. Output	6BG6G	6BG6G	5BT	
V17	Damper	6W4GT	6W4GT	4CG	
V18	HV Rectifier	1B3GT	1B3GT	1C	
V19	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: SCOTT PART No.	REPLACEMENT DATA: SYLVANIA PART No.	REPLACEMENT DATA: GENERAL ELECTRIC PART No	RTMA BASE TYPE	NOTES
V20A	21FP4A	21FP4A 21FP4 ①	21FP4A	12C	① Circuit Changes Necessary
B	24AP4			12D	
C	20HP4	20HP4		12C	
D	17HP4	17HP4		12C	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SCOTT PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: MALLORY PART No.	REPLACEMENT DATA: SPRAGUE PART No.	NOTES
C1A	▲40	450	CLC-10075	AFH4-79	BO46	BR2045A		FP447	TYL-3785	
B	▲40	450			BR2045A				TYA-1705	
C	▲20	450								
C2A	▲40	350	CLC-10074	AFH3-28	CO23		FP330.7	TYL-3617		
B	▲10	250								
C3A	20	450	CLC-10050	PR8450/20	BR2045A		TC75	TVA-1709	Red	
B	100	25		PR825/100	BR1251A		TC250	TVA-1207	Yellow	
C4	50	300	CLA-10067C	PR8450/50	BR1035		TC68	TVA-1713		
C5	4	50	CLA-10027A	PR8150/4	BR350		TC30	TVA-1303		
C6	3-9				829-10					
C7	1000			CN-1-001	MFT-1000				503C-D1	
C8	2.2			SIZ.2NP0	TCZ-2.2		NP0K-2R2	ZT-5522	5TCCB-V22	
C9	.5-3				829-3			C7565A		
C10	47			BPD-000047	D6-470		GP1K-470	UC-5447	5GA-Q47	
C11	1000			CN-1-001	MFT-1000				503C-D1	
C12	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C13	1.5			SIL.5NP0	TCZ-1.5		NP0K-1R5	ZT-5515	5TCCB-V15	
C14	1000			CN-1-001	MFT-1000				503C-D1	
C15	47			BPD-000047	D6-470		GP1K-470	UC-5447	5GA-Q47	
C16	.5-3				829-3			C7565A		
C17	10			SIL0NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C18	5			SIL5N750	TCN-5		N750K-050	NT-555	5TCUB-V5	
C19	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C20	6.8			SIL.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C21	1000			CN-1-001	MFT-1000				503C-D1	
C22	1000			CN-1-001	MFT-1000				503C-D1	
C23	120			BPD-00012	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C24	5000		CMX-10002	BPD-005	MD-502	TM5D5	81-005	DC-525	5HK-D5	
C25	5000		CMX-10002	BPD-005	MD-502	TM5D5	81-005	DC-525	5HK-D5	
C26	5000		CMX-10002	BPD-005	MD-502	TM5D5	81-005	DC-525	5HK-D5	
C27	5000		CMX-10002	BPD-005	MD-502	TM5D5	81-005	DC-525	5HK-D5	
C28	5000		CMX-10002	BPD-005	MD-502	TM5D5	81-005	DC-525	5HK-D5	
C29	.1	600		P688-1	DF-104	PTK6P1		PT601	5TM-P1	
C30	5000		CMX-10002	BPD-005	MD-502	TM5D5	81-005	DC-525	5HK-D5	
C31	5000		CMX-10002	BPD-005	MD-502	TM5D5	81-005	DC-525	5HK-D5	
C32	5000		CMX-10002	BPD-005	MD-502	TM5D5	81-005	DC-525	5HK-D5	
C33	5000		CMX-10002	BPD-005	MD-502	TM5D5	81-005	DC-525	5HK-D5	
C34	5000		CMX-10002	BPD-005	MD-502	TM5D5	81-005	DC-525	5HK-D5	
C35	10			SIL0N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C36	5			SIL5NP0	TCZ-4.7		NP0K-050	ZT-556	5TCCB-V47	
C37	1500			BPD-0015	DD-152	TM5D15	5GL-0015	DC-5215	5HK-D15	
C38	330			SIL330	D6-331		GP3K-331	UC-5322	5GA-T33	
C39	.1	600		P688-1	DF-104	PTK6P1		PT601	5TM- P1	
C40	5			SIL5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCCB-V47	
C41	39	500		1469-00004		5R5Q4			MS-44	
C42	39	500		1469-00004		5R5Q4			MS-44	
C43	.02	600		P688-02	DF-203	PTK6S3		PT613	5TM-S3	
C44	5000		CMX-10002	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C45	.02	600		P688-02	DF-503	PTK6S3		PT613	5TM-S3	
C46	1000			SIL000	D6-102	TM5D1	GP2L-102	UC-531	5HK-D1	
C47	.004	400		P688-005	D6-502	PTK6D5	GP2-333-502	PT625	5TM-D5	Note 1
C48	.005	600		P688-05	DF-503	PTK6S5		PT615	5TM-S5	Note 2
C50	.01	600		P688-01	D6-103	PTK6S1	GP2-333-103	PT611	5TM-S1	Note 4
C51	.01	600		P688-01	D6-103	PTK6S1	GP2-333-103	PT611	5TM-S1	
C52	.005	600		P688-005	D6-502	PTK6D5	GP2-333-502	PT625	5TM-D5	
C53	220			SIL220	D6-221		GP2K-221	UC-5322	5GA-T22	
C54	.25	600		684-25		PTK6P25		PT6025	5TM-P25	
C55A	.002		P688-002	P688-002		PTK6D2		PT622		
B	.005		▲CMX-10013	P688-005	▲PC-100	PTK6D5	▲1406-01	PT625	▲1613C1	
C	.006			P688-005		PTK6D5		PT625		
C56	.005	600		P688-005	D6-502	PTK6D5	GP2-333-502	PT625	5TM-D5	
C57	.006	600		P688-005	D6-502	PTK6D5	GP2-333-502	PT625	5TM-D5	

PARTS LIST AND DESCRIPTIONS

CAPACITORS (cont)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SCOTT PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: MALLORY PART No.	REPLACEMENT DATA: SPRAGUE PART No.	NOTES
C58	.01	600		P688-01	D6-103	PTK6S1	GP2-333-103	PT611	5TM-S1	
C59	.1	600		P688-1	DF-104	PTK6P1		PT601	5TM-P1	
C60	.1	600		P688-1	DF-104	PTK6P1		PT601	5TM-P1	
C61	270	500								
C62	.001	600		P688-001	D6-102	PTK6D1	GP2L-102	PT621	5TM-D1	
C63	.001	600		P688-001	D6-102	PTK6D1	GP2L-102	PT621	5TM-D1	
C64	.005	600		P688-005	DF-502	PTK6D5	GP2-333-502	PT625	5TM-D5	
C65	.05	600		P688-05	DF-503	PTK6S5		PT615	5TM-S5	
C66	.004	400	CPA-14402B							
C67	270	500								
C68	430	500								
C69	430	500								Note 3
C70	.05	600		P688-05	DF-503	PTK6S5		PT615	5TM-S5	
C71	.25	600		684-25		PTK6P25		PT6025	5TM-P25	
C72	.25	600		684-25		PTK6P25		PT6025	5TM-P25	
C73	220	500								
C74	56	2000								
C75	5000			BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C76	5000			BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C77	.02	600		P688-02	DF-503	PTK6S3		PT613	5TM-S3	
C78	5000			BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	Note 4

Note 1. Some Models use .005MFD in this application.
Note 2. Some Models use .01MFD in this application.
Note 3. Some Models use 270MMF in this application.
Note 4. Not used in all Models.
◆ Items C55A, C55B, C55C, R70A, R70B, R70C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SCOTT PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: MALLORY PART No	INSTALLATION NOTES
R1A	750Ω		VC-12127	QJ-246*	RTV-297	SBBT-682-S	WF13-T251	Contrast-Tap ② 500Ω-Panel
B	250KΩ						UR-254	Volume-Rear
C	Switch						UB-26	Attach to R1B
R2A	1.5Meg		VC-12132E	QH-138	AG-83-S	AB-89	U-56	Vert. Hold
B	Shaft		Not Req.	Not Req.	KS8-3	AK-4	Not Req.	Attach to R2A
R3A	50KΩ		VC-12131E	QH-123	AG-44-S	AB-31	U-35	Horiz. Hold
B	Shaft		Not Req.	Not Req.	KS8-3	AK-4	Not Req.	Attach to R3A
R4A	100KΩ		VCA-12135	QH-128	AG-49-S	AB-40	SU-41	AGC
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R4A
R5A	500Ω		VC-12120C	QH-114	AG-19-S	AB-10	SU-14	Vert. Linearity
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R5A
R6A	2.5Meg		VC-12121D	QH-239	AG-84-S	AB-83	SU-585	Vert. Size
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R6A
R7A	100KΩ		VCA-12135	QH-128	AG-49-S	AB-40	SU-41	Brightness
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R7A

◆ CONCENTRIKIT EQUIVALENT-KIT K-5, BASE ELEMENTS & SHAFTS B1?-105 & P1-210 (Panel)
B13-150 & R2-256 (Rear) & SWITCH 76-1.

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: SCOTT PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R8	15KΩ	½		BTS-15K	
R9	47KΩ	½			Note 8
R10	100KΩ	½			
R11	180KΩ-5%	½			Note 8
R12	150Ω	½		BTS-1500	
R13	100KΩ	½			
R14	10KΩ	½		BTS-10K	
R15	330KΩ	½			
R16	10KΩ	½			
R17	15KΩ	½			
R18	8200Ω	2		BTB-8200	Note 2
R19	8200Ω	2		BTB-8200	Note 2
R20	10KΩ	2		BTB-10K	
R21	2.2Meg	½		BTS-2.2Meg	
R22	2.2Meg	½		BTS-2.2Meg	
R23	680Ω	2		BTB-680	Note 3
R24	470Ω	½		BTS-470	
R25	22KΩ	½			
R26	82Ω	½		BTS-82	
R27	100Ω	½		BTS-100	
R28	470Ω	½		BTS-470	
R29	1 Meg	½		BTS-1 Meg	
R30	8200Ω	½			
R31	82Ω	½		BTS-82	
R32	100Ω	½		BTS-100	
R33	10KΩ	½			
R34	180Ω	½		BTS-180	
R35	100Ω	½		BTS-100	
R36	6800Ω	½			
R37	180Ω	½		BTS-180	
R38	100Ω	½		BTS-100	
R39	8200Ω	½		BTS-8200	
R40	33Ω	½		BTS-33	
R41	1000Ω	½		BTS-1000	
R42	2700Ω	2		BTB-2700	Note 4
R43	1800Ω	2		BTB-1800	
R44	18KΩ	½		BTS-18K	
R45	220KΩ	½		BTS-220K	
R46	100KΩ	½		BTS-100K	
R47	220KΩ	½		BTS-220K	
R48	1 Meg	½		BTS-1 Meg	
R49	68KΩ	½		BTS-68K	Note 1
R50	47KΩ	½			
R51	1000Ω	½		BTS-1000	
R52	12KΩ	½			
R53	33KΩ	½			Note 8
R54	1000Ω	½			
R55	15KΩ	½			
R56	15KΩ	½			Note 8
R57	10Meg	½		BTS-10Meg	
R58	470KΩ	½		BTS-470K	
R59	330KΩ-5%	½		BTS-330K-5%	
R60	180KΩ-5%	½		BTS-180K-5%	
R61	100KΩ	½		BTS-100K	Note 1
R62	33Ω	1		BTA-33Ω	Note 6
R63	220KΩ	½		BTS-220K	Note 1
R64	470KΩ	½		BTS-470K	
R65	2.2Meg	½		BTS-2.2Meg	
R66	4700Ω	½		BTS-4700	
R67	47KΩ	½		BTS-47K	
R68	100KΩ	½		BTS-100K	
R69	15KΩ	½		BTS-15K	
R70A	22KΩ	½		BTS-22K	
B	8200Ω	½	◆CMX10012	BTS-8200	
C	8200Ω	½		BTS-8200	
R71	330KΩ	½		BTS-330K	
R72	33KΩ	½		BTS-33K	
R73	1000Ω	½		BTS-1000	
R74	470KΩ	½		BTS-470K	
R75	680KΩ	½		BTS-680K	
R76	820KΩ	½		BTS-820K	
R77	4700Ω	½		BTS-4700	
R78	2.2Meg	½		BTS-2.2Meg	
R79	560Ω	½		BTS-560	
R80	560Ω	½		BTS-560	
R81	100KΩ	½		BTS-100K	
R82	47KΩ	½		BTS-47K	
R83	680KΩ	½		BTS-680K	
R84	47KΩ	½		BTS-47K	
R85	470KΩ	½		BTS-470K	
R86	47KΩ	½		BTS-47K	Note 7
R87	1500Ω	½		BTS-1500	
R88	5600Ω	½		BTS-5600	
R89	100KΩ	½		BTS-100K	
R90	220KΩ	½		BTS-220K	
R91	1 Meg	½		BTS-1 Meg	
R92	68Ω	½			
R93	6800Ω	2		BTB-6800	
R94	3900Ω	2		BTB-3900	Note 1
R96	8200Ω	2		BTB-8200	

RESISTORS (cont)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: SCOTT PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R97	3.3Ω	½			
R97	200Ω	10		1 5/4A-200	Note 1
R98	1500Ω	1		BTA-1500	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: SCOTT PART No.	REPLACEMENT DATA: IRC PART No	NOTES
R99	220KΩ	½		BTS-220K	
R100	270KΩ	1		BTA-270K	Note 1

Note 1. Not used in all models.
Note 3. Some models may use a 4100Ω (4 Watt) resistor in this application.
Note 3. Some models may use a 470 Ω resistor in this application.
Note 4. Some models may use a 18000 resistor in this application.
Note 5. Some models may use a 39KΩ resistor in this application.
Note 6. Some models may use a 39Ω resistor in this application.
Note 7. Some models may use a 68KΩ resistor in this application.
Note 8. Some models may use Two 6800Ω resistors in series in this application.
◆ Items R70A, R70B, R70C, C55A, C55B, C55C are combined in one unit.

PROPERTY OF
L. F. BLANKENSHIP

TRANSFORMER (POWER)

ITEM No.	RATING: PRI	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: SCOTT PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: TRIAD PART No	REPLACEMENT DATA: RCA TYPE No.
T1	117VAC ② 1.4A	730VCT .180ADC	5VAC ③ 3A	6.3VAC ④ 1.85A SEC. 4 6.3VAC ⑤ 6.3A	TPC-10011	P-8169	P-3059	TP-368 ①	R-37BC	

① Drill new mounting hole.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: SCOTT PART No.	REPLACEMENT DATA: STANCOR PART No	REPLACEMENT DATA: MERIT PART No	REPLACEMENT DATA: CHICAGO PART No	REPLACEMENT DATA: TRIAD PART No	REPLACEMENT DATA: RCA TYPE No.	NOTES
T3	259ΩTap ③ 24Ω	100 Tap ② .5Ω; 7.3Ω SEC. 2 2.5Ω SEC. 3 0Ω	THC-10017-C						Horiz. Output Trans.
T3	1080ΩTap ③ 10.6Ω		TOB-10045H TOB-10045P ⑤	A-8123	A-3037	TSO-8 ①	A-102X	222T1	Vert. Output Trans.
T4A	15Ω		TDB-10009C	DY-9A ②	MDF-70	TT-5	Y-21③	206D1 ③	Horiz. Deflection Coils
B	51Ω		TDB-10001A ④						Vert. Deflection Coils
T5	.4Ω		T0-10023C	WC-1	MWC-2④	TW-1		201R1	Width Coil

① Connect as auto transformer.
② Use original horiz. deflection coil network if necessary.
③ Use original deflection coil network.
④ Enlarge mtg. hole.
⑤ Alternate vert. output trans.
⑥ Alternate deflection yoke.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SCOTT PART No	REPLACEMENT DATA: STANCOR PART No	REPLACEMENT DATA: MERIT PART No	REPLACEMENT DATA: CHICAGO PART No	REPLACEMENT DATA: TRIAD PART No	NOTES
T6	5.1KΩ	3.7Ω	340Ω	.52Ω	T0C-10034C	A-3877 ①	A-2930 ①	RO-301 ①	S-3X ①	① Drill one new mtg. hole.

SPEAKER

ITEM No.	RATINGS: SIZE	FIELD	V C. IMP	REPLACEMENT DATA: SCOTT PART No	REPLACEMENT DATA: VIKING PART No	REPLACEMENT DATA: QUAM PART No	NOTES
SP1	10"	PM	3.7Ω	SR10024	10J11	10A31	

COILS (RF-IF)

ITEM No.	USE	DC RES PRI.	DC RES SEC.	REPLACEMENT DATA: SCOTT PART No.	REPLACEMENT DATA: MEISSNER PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: MILLER PART No.	NOTES
L1	Ant. Coils	OOCT	0Ω					
L2	Fil. Choke	0Ω						
L3	Neutr. Coil	0Ω						
L4	RF, Mixer Grid & Osc. Coils	0Ω						
L5	Fil. Choke	0Ω						
L6	RF Choke	0Ω						
L7	1st. Video IF	.9Ω						
L8	RF Choke	1.2Ω						
L9	2nd. Video IF	.1Ω	.1Ω	TSA-10054B	17-1062		6250	
L10	Fil. Choke	0Ω		LGA-10019A	19-3001	TV-189	6175	.4 Microhenry
L11	3rd.Video IF	.1Ω	.1Ω	TSA-10054B	17-1063		6249	
L12	4th. Video IF	.1Ω	.1Ω	TSA-10054B	17-1063		6249	
L13	5th. Video IF	.1Ω	.1Ω	TSA-10054B	17-1064		6250	
L14	Series Peaking Coil	6Ω		LGA-10032	19-3125		6153	120 Microhenries
L15	Shunt Peaking Coil	8.5Ω		LGA-10083	19-3180	TV-184	6180	180 Microhenries
L16	Series Peaking Coil	7.5Ω		LGA-10034	19-3093	TV-181	6177	100 Microhenries
L17	Sound IF	1.7Ω		TSA-10059C	17-3400	TV-151	1470	
L18	Ratio Det.	10Ω	.2QCT	TSB-10062A	17-1053	TV-110	1466	Tertiary winding-.2Ω
L19	Horiz. Osc.	60Ω		LGA-10017B	19-1576	TV-163	6210	

SCOTT MODELS 817C, T, 821C, CB, D, T, TB (Ch. 9036, 9037, 9038, 9039)

PARTS LIST AND DESCRIPTIONS (Continued)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			SCOTT PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	5 Amp. 250V.			312005	341001	MTH5	HKP
M2	3AG S/B	½ Amp. 125V.			313.500 (3AG ½ A S/B)	121002 (2 used)	MDL ½	4592 (2 used)

MISCELLANEOUS

ITEM No.	PART NAME	SCOTT PART No.	NOTES
M3	RF Tuner	TT-10014	
M4	Crystal Diode		Video Detector, Type 1N60
M5	Switch		Highlight Control
M6	Centering Magnet	MDA-10002	
M7	Ion Trap	ITA-10003	
B2	Trimmer Cap.	CTA-10005	Horiz.Drive, 25-280MMF
	Cabinet	ZWD-10143	Model 817C
	Cabinet	ZWD-10142A	Model 817T

TROUBLE SHOOTING AIDS (cont)

AUDIO

WEAK OR NO SOUND

Check by substitution V8, V9, V10 and V11. Check stages of V10A and V11 using audio signal generator. Apply audio signal to control grid of V10A (pin 2).

If Satisfactory	If Unsatisfactory
Check adjustment of ratio detector (A7 and A8) and audio IF (A6). Check associated circuit components.	Check components associated with V10 and V11 especially coupling and bypass capacitors.

BUZZ

Adjust ratio detector secondary for minimum buzz. If buzz is still objectionable, substitute V9 and readjust A7 and A8. Check C5, C46 and C47.

DISTORTED

Check by substitution V8, V9, V10 and V11. Check stages of V10A and V11 using audio signal generator and scope. Apply audio signal to control grid of V10A (pin2) connect scope from pin 3 of V11 to chassis.

If Satisfactory	If Unsatisfactory
Check audio IF and ratio detector alignment. Check associated components.	Check all components associated with V10A and V11 especially all bypass and coupling capacitors.

POWER

DEAD SET

If tubes fail to light check M1, AC interlock assembly and T2. If tubes light but set still inoperative, check M2 and V19. Check B+ network.

SMALL AND/OR DIM RASTER

Check V19 by substitution. Check B+ and decoupling network and components.

HIGH VOLTAGE

LOSS OF HIGH VOLTAGE

Check by substitution V15, V16, V17 and V18. Check waveform at W15.

If Satisfactory	If Unsatisfactory
Check R96, T2, T4A and other associated components.	Check C68, C69, C67 and other associated components.

INSUFFICIENT HIGH VOLTAGE

Check by substitution V15, V16, V17, V18 and V19. Check picture tube. Proceed as outlined under "Loss of high Voltage".

BLOOMING

Check by substitution V16, V17 and V18. Check R96, T2, T4A, picture tube and other associated components.

GENERAL

RASTER SOUND NO PICTURE

See "Loss of Video".

RASTER NO SOUND NO PICTURE

Check by substitution, V1, V2, V3, V4, V5, V6, V7 and V8. Check video detector crystal. Check video IF and detector components.

INTERMITTENT STREAKS

Check high voltage section for corona discharge and arcing.

TOTAL LOSS OF SYNC

Check by substitution V12 and V8. Check associated components.

Symptoms shown are assumed and are not indicative of the quality and workmanship of this receiving equipment.

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF tuner oscillator circuit may be accomplished by removal of the channel selector and fine tuning knobs. The adjustments are accessible, one at a time, through the small hole in the cabinet to the right of the channel selector shaft.

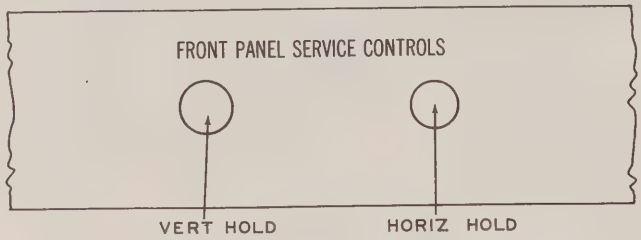
PICTURE TUBE SAFETY GLASS CLEANING

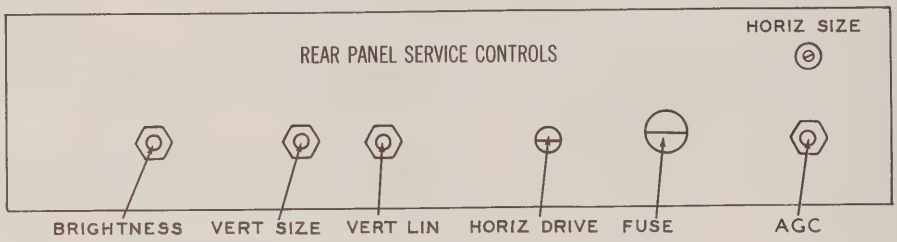
To clean safety glass, remove 3 wood screws holding wood strip at top of cabinet. Remove wood strip and safety glass. Use extreme caution when removing safety glass.

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION





SPECIAL ADJUSTMENTS - AGC CONTROL ADJUSTMENT

Tune receiver to strongest TV station available. Set contrast control fully clockwise and adjust AGC control clockwise as far as possible without distortion or instability of picture.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

For adjustment of the horizontal oscillator, it is necessary to remove the rear cover and supply power to set. Adjustment is located on top of chassis. Set the horizontal hold control at the center of its range and adjust the horizontal oscillator slug (L19) until picture synchronizes horizontally. (For location see tube placement chart).

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (L18) located on bottom of chassis. Screen on bottom is removable. (See tube placement chart).

FUSES

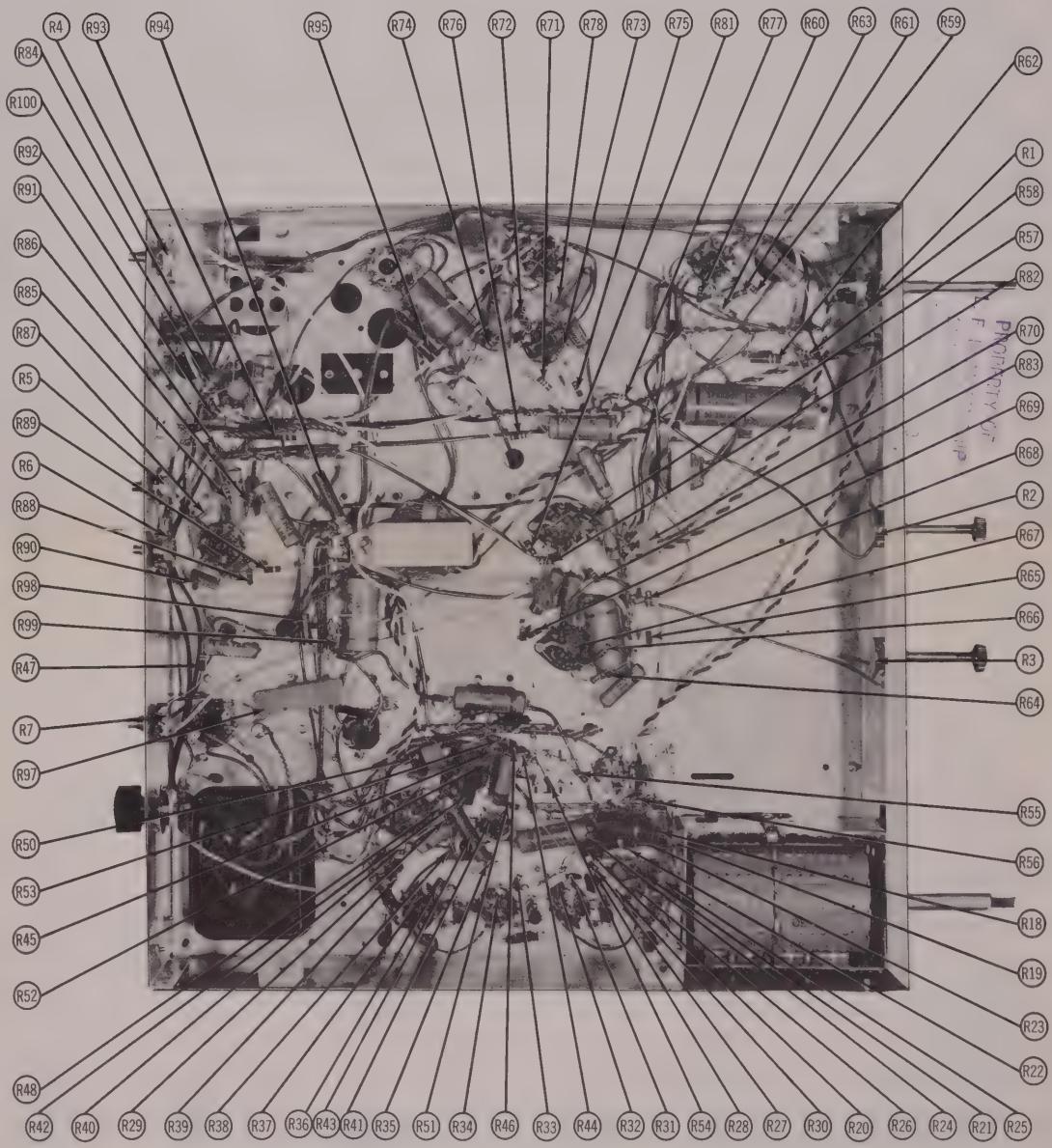
Two fuses are used. One for power trans. primary protection and one for LV power supply protection. (For location see tube placement chart).

CENTERING

Centering is accomplished mechanically by adjusting a magnetic ring around the neck of the picture tube located flush against the yoke. Turn the disk-like knob and at the same time rotate the ring around the tube until picture is properly centered.

DISASSEMBLY INSTRUCTIONS

1. Remove 4 push on type control knobs from front panel.
2. Remove 8 wood screws. Remove rear cover.
3. Disconnect built-in antenna and speaker.
4. Remove 4 chassis bolts. Remove chassis.
5. Remove 2 wood screws on each side of CRT at top.
6. Remove 2 nuts. Remove speaker.



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

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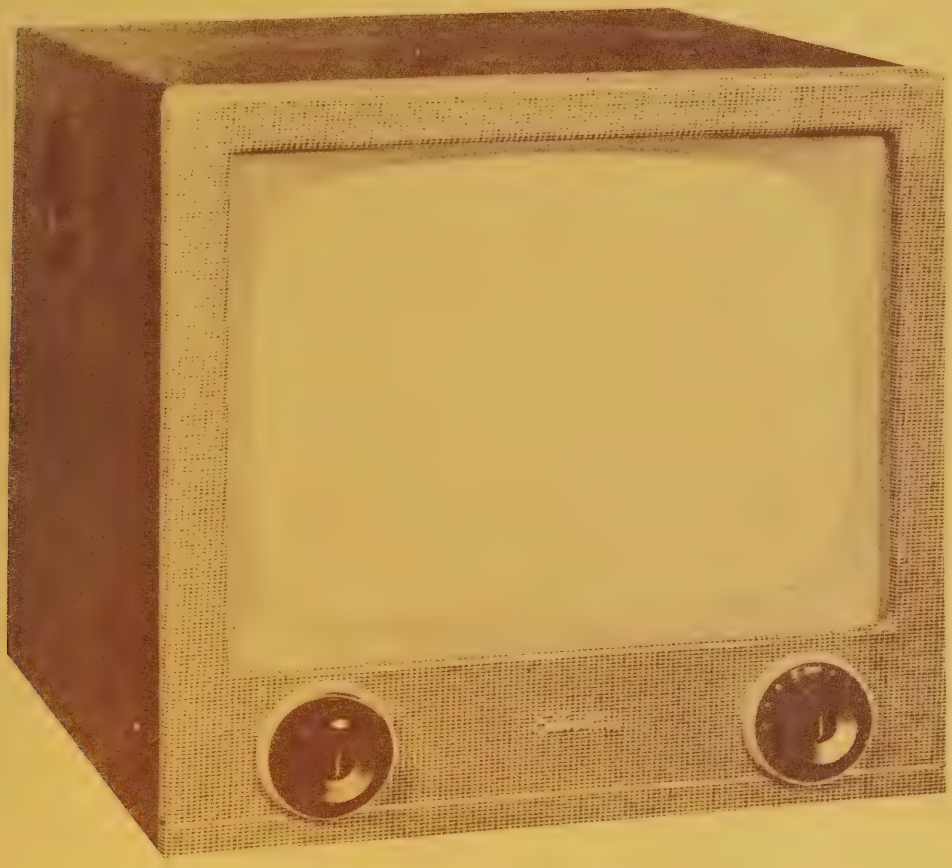

MODEL 2100A

SILVERTONE MODELS 2100A, 2140 (Ch. 110.817-1), 2150A (Ch. 110.820-1)

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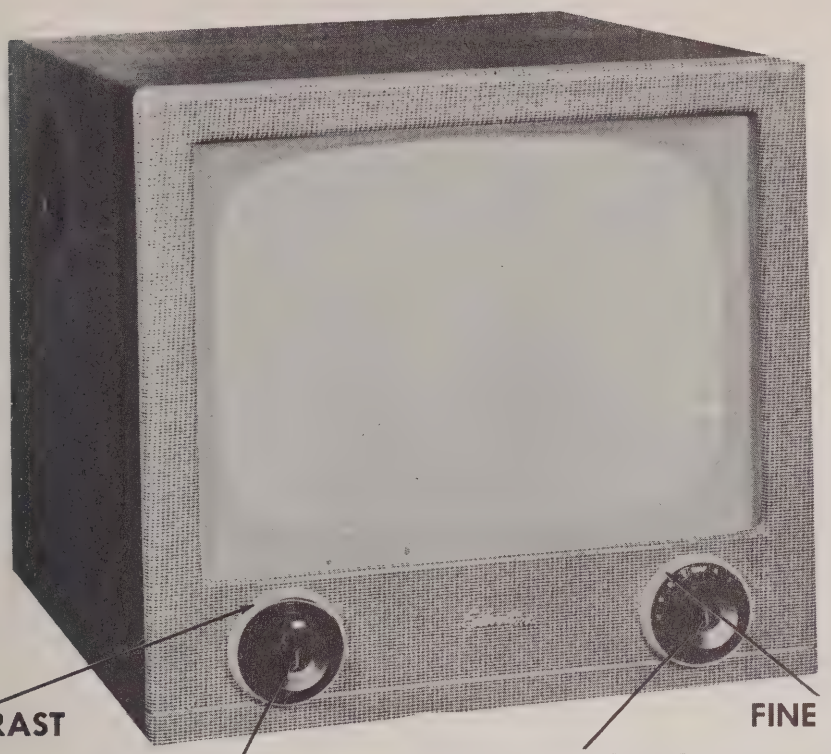

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SILVERTONE MODELS 2100A, 2140 (Ch. 110.817-1), 2150A (Ch. 110.820-1)

SILVERTONE MODEL 2100A

TRADE NAME	Silvertone Models 2100A, 2140 (Ch. 110, 817-1) 2150A (Ch. 110, 820-1)
SUPPLIER	Sears Roebuck & Co., 925 Homan Ave, Chicago, Ill.
TYPE SET	Television Receiver
TUBES	Twenty-One

POWER SUPPLY 110-120 Volts AC-60 Cycle RATING 1.9 Amp @ 117 Volts AC
TUNING RANGE—Channels 2 thru 13, Video IF 25.75MC, Sound IF 21.25MC (Intercarrier)

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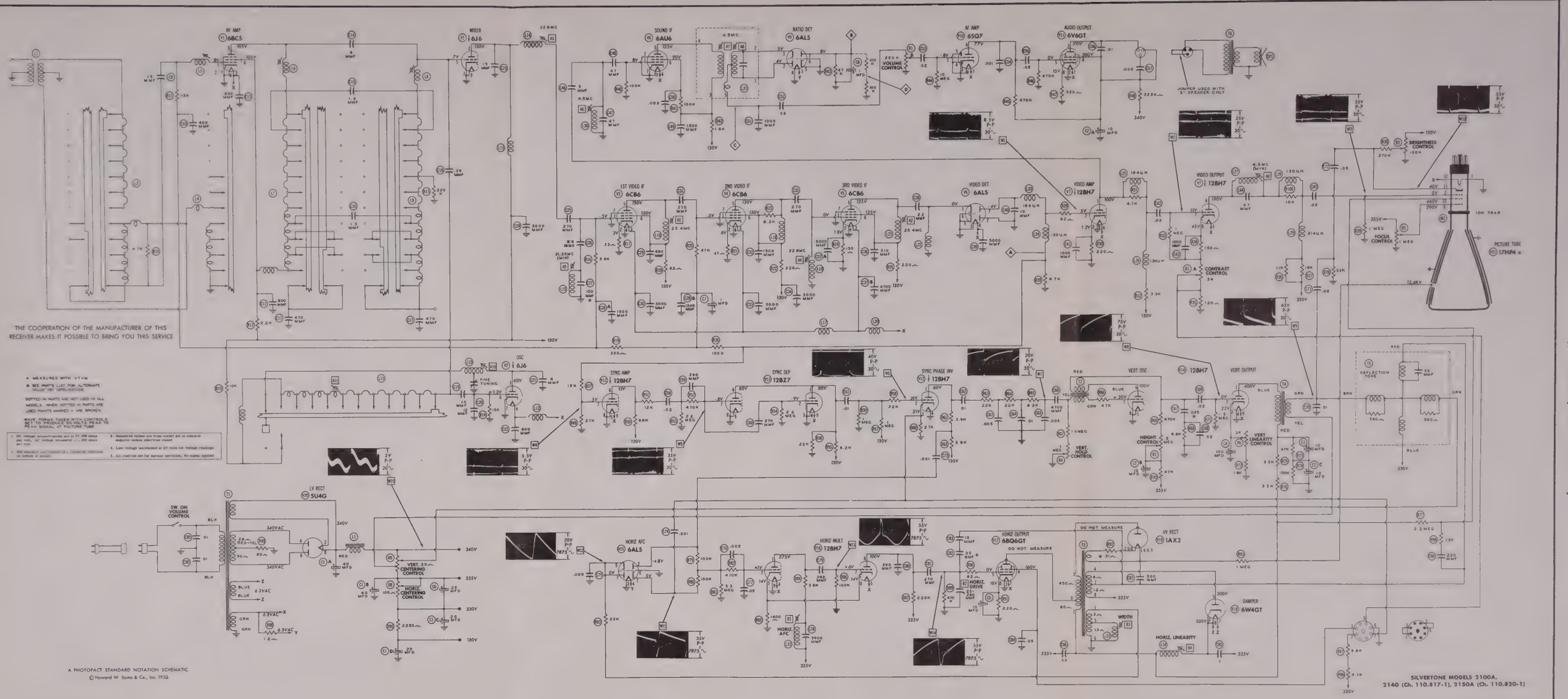

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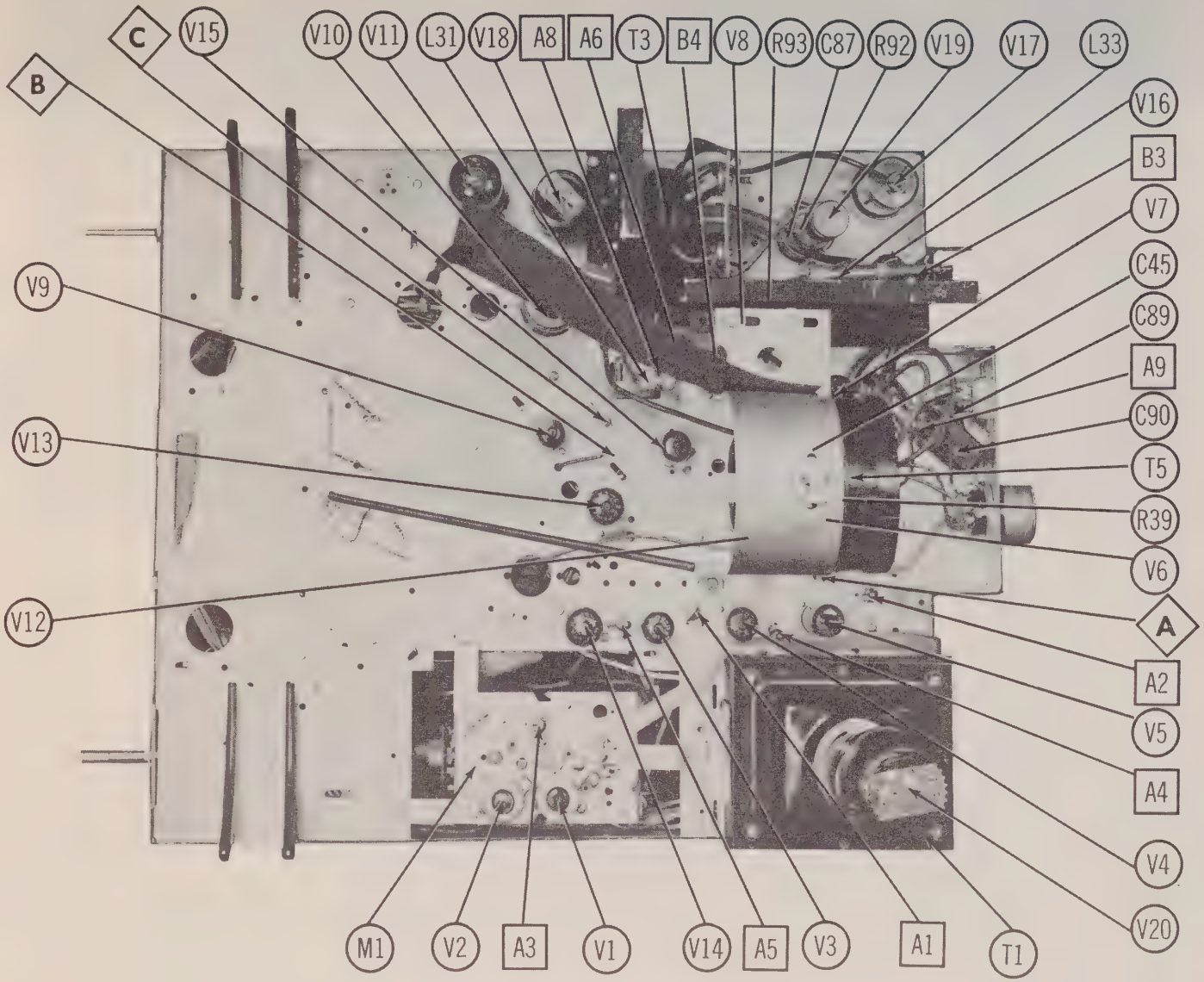

CHASSIS TOP VIEW

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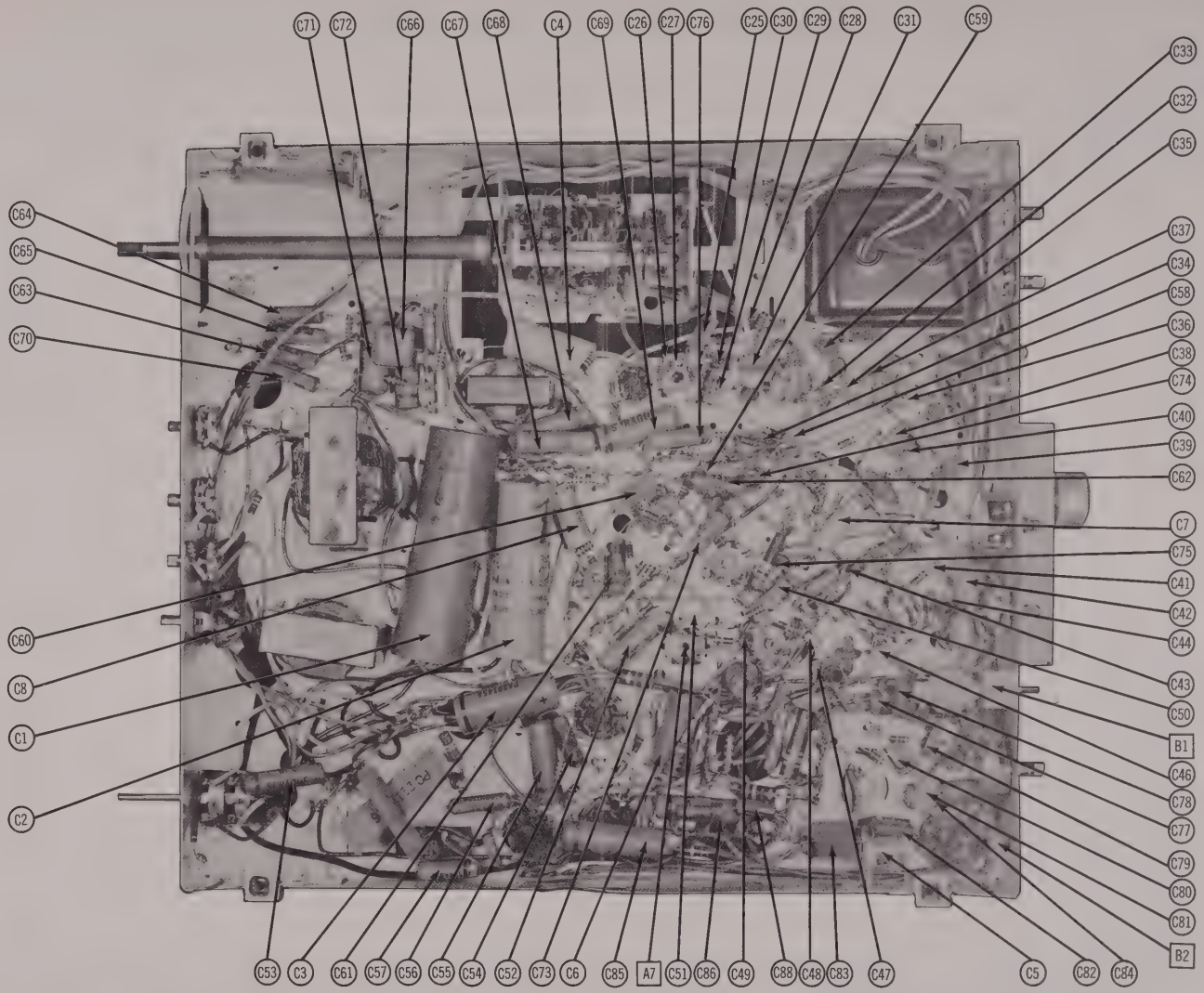
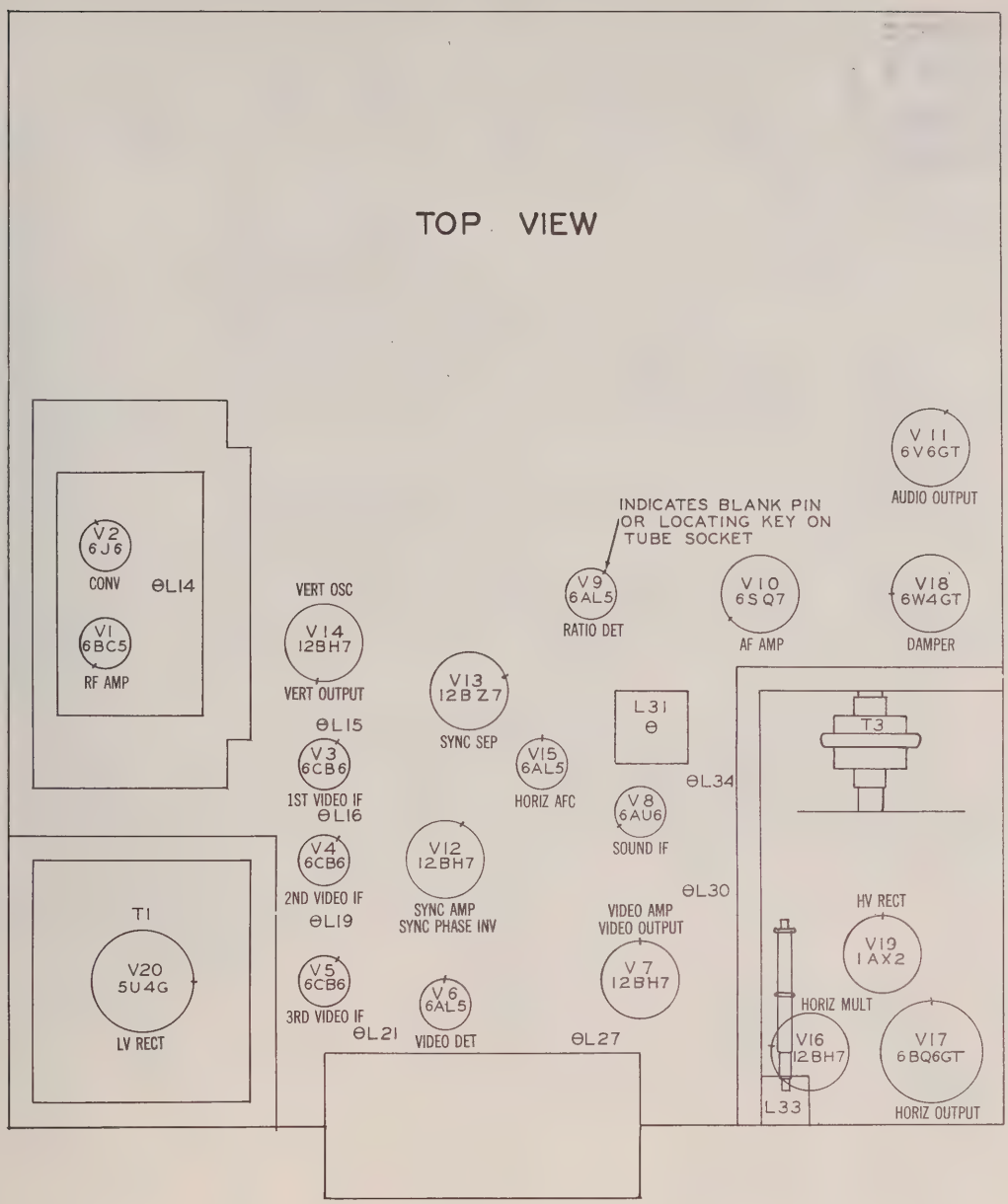


CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound-V20

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster-V2, V3, V4, V5, V6
No pic, no sound, has snow-V1, V2, V3
No pic, has sound, has raster-V7, V21
Has pic, no sound -V8, V9, V10, V11

SYNC FAILURE
No vert. sync.-V12, V14
No horiz. sync-V12, V15, V16
No vert. or horiz. sync-V12, V13

SWEEP FAILURE
No raster, has sound-V16, V17, V18, V19, V21
No vertical deflection-V14
Poor vert. linearity or foldover-V14
Poor horiz. linearity or foldover-V16, V17, V18
Narrow picture-V16, V17, V18, V19, V20
Vert off freq.-V12, V14
Horiz. off freq.-V12, V15, V16

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal multivibrator tube (V16).

VIDEO IF ALIGNMENT

Remove the converter tube (V2) from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded side of C7. Connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	25.4MC (Unmod)	Any	DC probe to point ◇A◇ Common to chassis.	A1, A2	Adjust for maximum deflection.
2.	"	"	22.8MC	"	"	A3, A4	"
3.	"	"	21.75MC	"	"	A5	Adjust for MINIMUM deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	Direct	High side to an grounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	21.25MC 25.75MC	Any	Vert amp to point ◇A◇ Low side to chassis.		Check for response curve similar to fig. 1. If necessary retouch A1 thru A4 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from point ◇B◇ to chassis. The junction of these two resistors is alignment point ◇D◇ as shown on schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	.001MFD	High side to pin 2 (grid) of 12BH7 (V7). Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point ◇B◇ Common to chassis.	A6, A7	Adjust for maximum deflection.
6.	"	"	"	"	DC probe to point ◇C◇ Common to point ◇D◇	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	.001MFD	High side to pin 2 (grid) of 12BH7 (V7). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. amp to point ◇B◇ Low side to chassis.	A6, A7	Disconnect stabilizer capacitor C8. Adjust for curve of maximum amplitude and symmetry as in fig. 2.
6.	"	"	"	"	"	Vert. amp to point ◇C◇ Low side to chassis.	A8	Reconnect capacitor C8. Adjust so that 4.5MC occurs at center of crossover lines as in fig. 3. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	27KΩ	High side to pin 2 (grid) of picture tube. Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point ◇B◇ Common to chassis.	A9	Adjust for MINIMUM deflection.

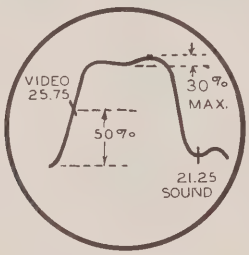


FIG. 1

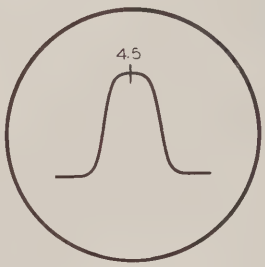


FIG. 2

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Remove dummy converter tube and replace original 6J6 in its socket.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω carbon resistors.	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp.)	211.25MC 215.75MC	13	Vert. amp. to point (A). Low side to chassis.	A10	Adjust to place sound marker in trap notch as in fig. 4. Video marker should be at 50%.
9.	"	"	207MC (10MC Swp.)	205.25MC 209.75MC	12	"		Check for marker placement as shown in fig. 4. Retouch A10, if necessary, to bring any individual channel within range of fine tuning control then re-check all other high bank channels to see that they have not been seriously affected.
			201MC (10MC Swp.)	199.25MC 203.75MC	11			
			195MC (10MC Swp.)	193.25MC 197.75MC	10			
			189MC (10MC Swp.)	187.25MC 181.75MC	9			
			183MC (10MC Swp.)	181.25MC 185.75MC	8			
			177MC (10MC Swp.)	175.25MC 179.75MC	7			
10.	"	"	85MC (10MC Swp.)	83.25MC 87.75MC	6	"	A11	Adjust to place sound marker in trap notch as in fig. 4. Video marker should be at 50%.
11.	"	"	79MC (10MC Swp.)	77.25MC 81.75MC	5	"		Check for marker placement as shown in fig. 4. Retouch A11 if necessary, to bring any individual channel within range of fine tuning control then re-check all other low band channels to see that they have not been seriously affected.
			69MC (10MC Swp.)	67.25MC 71.75MC	4			
			63MC (10MC Swp.)	61.25MC 65.75MC	3			
			57MC (10MC Swp.)	55.25MC 59.75MC	2			

RF ALIGNMENT

The RF section of this tuner has been properly aligned at the factory and is very stable.
Alignment of this portion should not be required in the field.

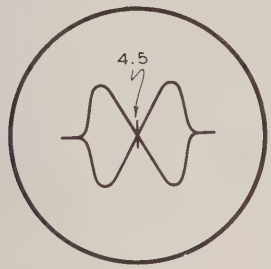


FIG. 3

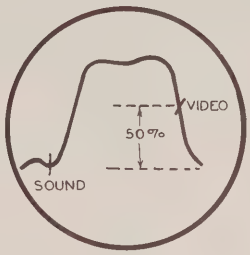
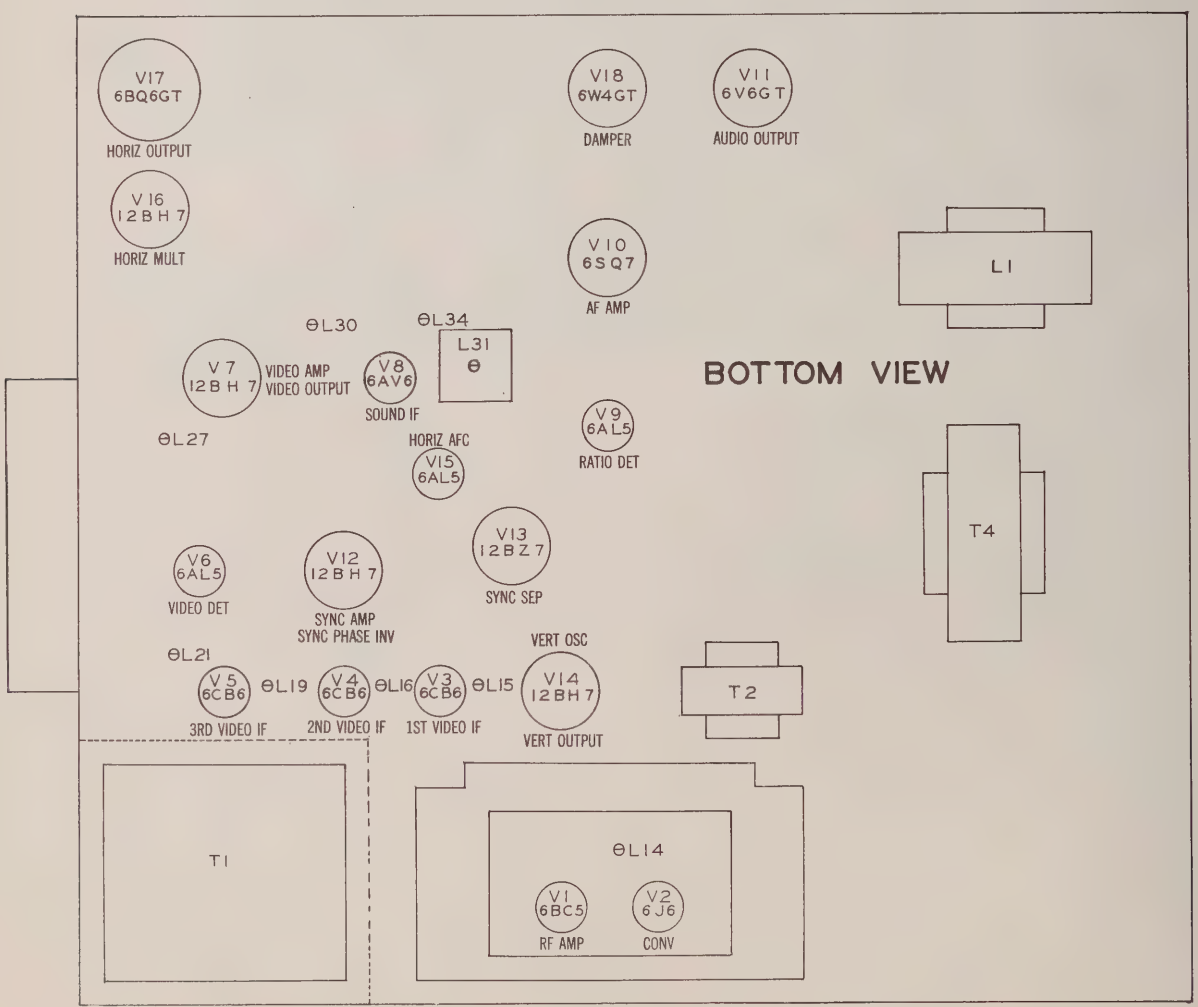


FIG. 4

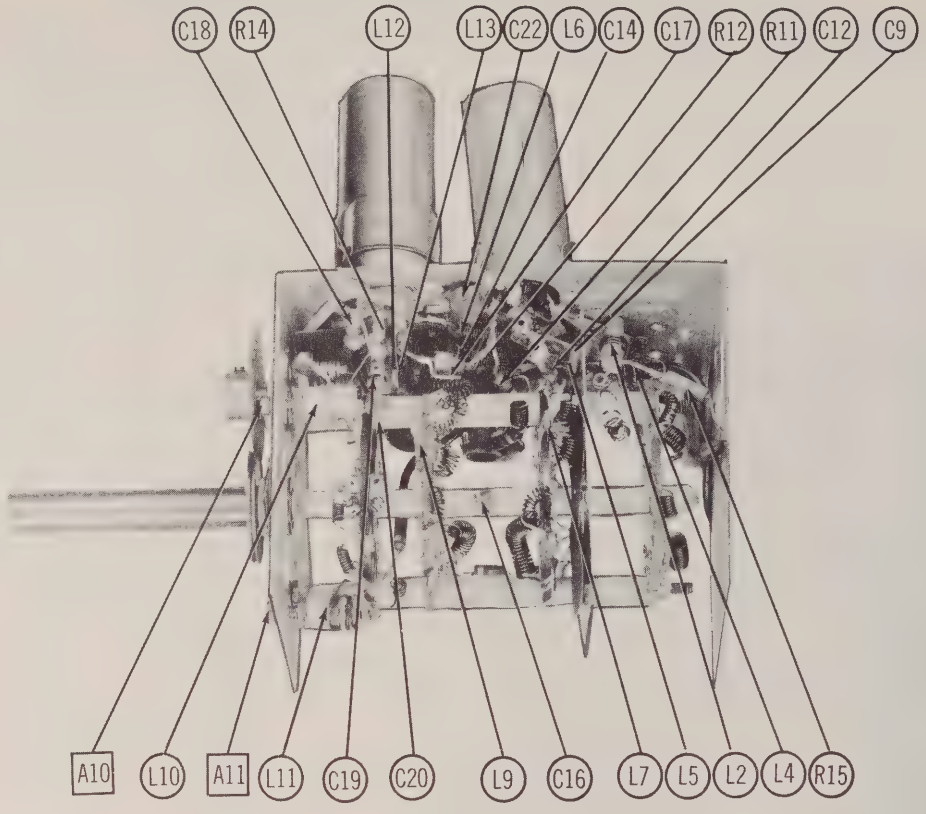
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BC5	120KΩ	0Ω	.1Ω	0Ω	†4.5KΩ	†4.5KΩ	0Ω		
V 2	6J6	†12.3KΩ	†2.3KΩ	0Ω	.1Ω	220KΩ	15KΩ	0Ω		
V 3	6CB6	107KΩ	33Ω	.64Ω	0Ω	†2.4KΩ	†2.4KΩ	0Ω		
V 4	6CB6	150KΩ	47Ω	.64Ω	0Ω	†2.5KΩ	†2.5KΩ	0Ω		
V 5	6CB6	.2Ω	150Ω	.37Ω	0Ω	†2.5KΩ	†2.5KΩ	0Ω		
V 6	6AL5	2.7Ω	0Ω	0Ω	.1Ω	0Ω	0Ω	4.3KΩ		
V 7	12BH7	†5.6KΩ	4.3KΩ	220Ω	.1Ω	.1Ω	†6.8KΩ	1 Meg	1.1KΩ	0Ω
V 8	6AU6	100KΩ	0Ω	0Ω	.1Ω	4.1KΩ	†105KΩ	0Ω		
V 9	6AL5	INF	INF	1.3Ω	0Ω	0Ω	0Ω	47KΩ		
V 10	6SQ7	0Ω	10 Meg	0Ω	0Ω	0Ω	†475KΩ	.1Ω	0Ω	
V 11	6V6GT	INF	0Ω	†3.6KΩ	†3.3KΩ	470KΩ	INF	.1Ω	330Ω	
V 12	12BH7	†10KΩ	550KΩ	2.7KΩ	0Ω	0Ω	†70KΩ	11KΩ	0Ω	.1Ω
V 13	12BZ7	†10.5KΩ	2.2Meg	0Ω	0Ω	0Ω	†10.5KΩ	2.6Meg	0Ω	.1Ω
V 14	12BH7	#8.6KΩ	1.5Meg	2.5KΩ	0Ω	0Ω	†2.4Meg	2.4Meg	0Ω	.1Ω
V 15	6AL5	3.4Mgg	3.4Meg	0Ω	1.3Ω	22KΩ	0Ω	22KΩ		
V 16	12BH7	†5.6KΩ	3.8Meg	1.8KΩ	.1Ω	.1Ω	†220KΩ	100KΩ	1.8KΩ	0Ω
V 17	6BQ6GT	470KΩ	0Ω	INF	†11.5KΩ	470KΩ	INF	.1Ω	220Ω	Top Cap #87Ω
V 18	6W4GT	23KΩ	INF	200KΩ	INF	†97Ω	INF	200KΩ	200KΩ	
V 19	1AX2	PINS 1 - 9 HAVE INF RESISTANCE								Top Cap #537Ω
V 20	5U4G	INF	23KΩ	INF	88.2Ω	INF	90.5Ω	INF	23KΩ	
V 21	17HP4	0Ω	1 Meg	Pin 6 16KΩ	Pin 10 #2.2Meg	Pin 11 300KΩ	Pin 12 .1Ω			

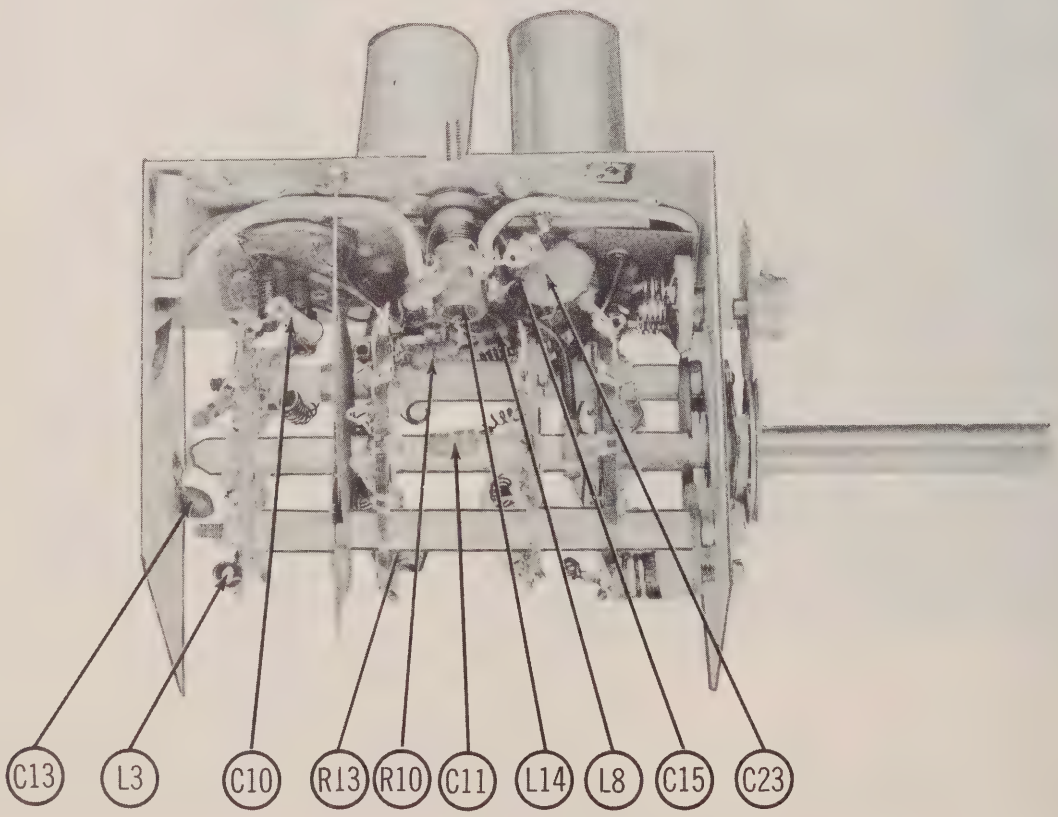
† MEASURED FROM PIN #8 OF V20
# MEASURED FROM PIN #3 OF V18



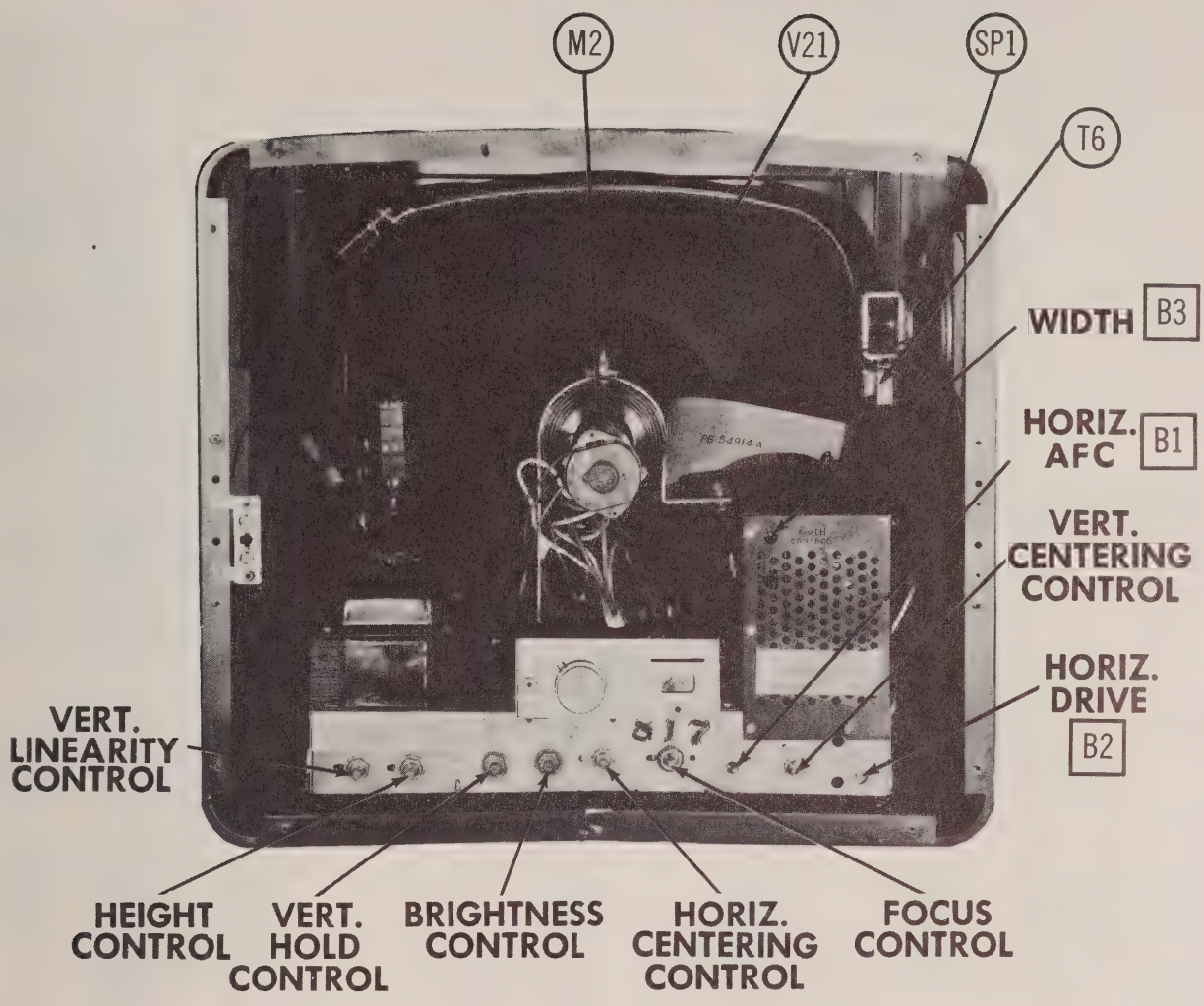
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Set the horizontal hold control to the center of its range and adjust the horizontal AFC slug (B1) until the picture synchronizes horizontally.

Adjust the horizontal drive trimmer (B2) in a counter clockwise direction as far as possible without the presence of vertical white lines or compression of the center of the picture.

Adjust the width slug (B3) for a picture slightly wider than necessary to fill the mask horizontally.

Adjust the horizontal linearity slug (B4) for a picture that is symmetrical from left to right.

DISASSEMBLY INSTRUCTIONS

1 Remove 5 push on type control knobs from front panel.

2 Remove 14 metal screws. Remove rear cover.

3 Remove 2 metal screws. Remove antenna bracket.

4 Disconnect speaker. Remove 2 nuts. Remove speaker.

5 Remove 4 chassis bolts. Remove chassis.

NOTE: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE Part No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1	RF Amplifier	6BC5	6BC5	7BD	
V2	Converter	6J8	6J8	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	Video Detector	6AL5	6AL5	6BT	
V7	Video Amplifier-Vert. Output	12BH7	12BH7	9A	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Ratio Detector	6AL5	6AL5	6BT	
V10	AF Amplifier	6SQ7	6SQ7		
V11	Audio Output	6V6GT	6V6GT	7AC	
V12	Sync Amplifier - Sync Phase Inv.	12BH7	12BH7	9A	
V13	Sync Separator	12BZ7	12BZ7	9AJ	
V14	Vert. Oscillator-Vert. Output	12BH7	12BH7	9A	
V15	Horiz. AFC	6AL5	6AL5	6BT	
V16	Horiz. Mult.	12BH7	12BH7	9A	
V17	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V18	Damper	6W4GT	6W4GT	4CG	
V19	HV Rectifier	1AX2	1AX2		
V20	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: SILVERTONE Part No.	REPLACEMENT DATA: SYLVANIA Part No.	REPLACEMENT DATA: GENERAL ELECTRIC Part No.	RTMA BASE TYPE	NOTES
V21A	17HP4	17HP4	17HP4	13C	① Circuit changes necessary
		17HP4	17HP4	13C	
B	20HP4	20HP4	20HP4	13C	
		20HP4A ①	20HP4A ①	13C	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE Part No.	REPLACEMENT DATA: AEROVOX Part No.	REPLACEMENT DATA: CENTRALAB Part No.	REPLACEMENT DATA: CORNELL-DUBILIER Part No.	REPLACEMENT DATA: ERIE Part No.	REPLACEMENT DATA: MALLORY Part No.	REPLACEMENT DATA: SPRAGUE Part No.	NOTES
C1A	40	450	A20144	PRS450/40-40		UPT4445		FP447	TVA-2740	Red
B	40	450		PRS450/20-20		BRD2245			TVA-2722	Blue
C	20	450								Orange
D	20	450								Green
C2A	10	450	A20135	AFH3-31		UPU1145	4N727	TVL-3776		Red
B	10	450								Yellow
C	10	450								Blue
C3	10	250	A20145	PRS250/12		BR1235A	TC52	TVA-1504		
C4	100	25	A20130	PRS25/100		BR6230A	TC2501	TVA-1207		
C5	10	25	A20137	PRS25/10		BR102A	TC22	TVA-1204		
C6	25	12	A20147	PRS25/25		BR252A	TC26	TVA-1205		
C7	1	50	A20131	E2E2.73		BBR-1-50T	TC31	TVA-1300		
C8	1	50	A20138	E2E5.73		BBR-1-50T	TC31	TVA-1300		
C9	15		A556-203	SI15	D6-150		GPIK-150	UC-5415	5GA-Q15	
C10	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C11	470		A191-39	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C12	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C13	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C14	.8									
C15	1.6									
C16	1.5			SIL.5NP0	TCZ-1.5		NP0K-1R5	Z7-5515	5TCCB-V15	
C17	470		A191-39	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C18	.39									
C19	10			SI10N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C20	12				TCZ-12		NP0K-120			
C21	4						N330K-040			
C22	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C23	15		A556-203	SI15	D6-150		GPIK-150	UC-5415	5GA-Q15	
C24	5000		A19109	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C25	270	500	A190-133							
C26	6.8		A19177	SI6.8NP0	TCZ-6.8		NP0K-6R8		5TCCB-V68	
C27	100	500		1469-0001		5R5T1		MCB235	5GA-M1	Note 1
C28A	1500		A19147	BPD-2X0015	D2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C29	500	500	A558-234							
C30	5000		A19109	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C31	270	500	A190-133							
C32	1500		A19148	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C33	5000		A19109	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C34	5000		A19109	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C35	270	500	A190-133							
C36	510		A556-233							
C37A	4700		A19163	BPD-005	DD-2-502	TM5D5	811-005	DC-525	5HK-2D47	
B	4700			BPD-005		TM5D5	811-005	DC-525		
C38	22	500	A190-107	1469-000025		5R5Q25			MS-425	
C39	5000		A19109	BPD-005	DD-502	TM5T5	811-005	DC-525	5HK-D5	
C40	10		A555-101	SI10	D6-100	5W5Q1	GP1K-100	UC-541	5GA-Q1	
C41	1000		A555-136	SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C42	.05	600	A194-160	P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C43	1000		A192-156	SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C44	47		A555-113	SI47NP0	TCZ-47		NP0L-470	Z7-5447	5TCC-Q47	
C45	.05	600	A194-160	P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C46	5		A555-100	SI5	TCZ-4.7		GP1K-050	Z7-555	5GA-Q5	
C47	47		A555-113	SI47NP0	TCZ-47		NP0L-470	Z7-5447	5TCC-Q47	
C48	47		A555-113	SI47NP0	TCZ-47		NP0L-470	Z7-5447	5TCC-Q47	
C49	1500		A19148	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C50	.005	600	A194-151	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C51	1000		A556-236	SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C52	.05	600	A194-160	P688-05	DF-503	PTE6S5		PT615	6TM-S5	

CAPACITORS (cont)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE Part No.	REPLACEMENT DATA: AEROVOX Part No.	REPLACEMENT DATA: CENTRALAB Part No.	REPLACEMENT DATA: CORNELL-DUBILIER Part No.	REPLACEMENT DATA: ERIE Part No.	REPLACEMENT DATA: MALLORY Part No.	REPLACEMENT DATA: SPRAGUE Part No.	NOTES
C53	.02	600	A194-156	P688-02	DF-203	PTE6S2		PT612	6TM-S2	
C54	.001	600	A194-145	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C55	.05	600	A194-160	P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C56	.01	600	A194-151	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C57	.005	600	A194-151	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C58	.02	600	A190-158	P688-02	DF-203	PTE6S2		PT612	6TM-S2	
C59	390	500	A190-137	1469-0004		5R5T4		MCB243	MS-34	
C60	270	500	A190-133	1469-0003		5R5T3		MCB241	MS-33	
C61	.01	600	A194-155	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C62	.01	600	A194-155	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C63	.005	600	A194-151	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C64	.01	600	A194-155	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C65	.005	600	A194-151	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C66	4700	500	A194-163	1464-005		1DR5D5		MCB465	MS-25	
C67	.035	600	A194-158							Note 3
C68	.02	600	A194-156	P688-02	DF-203	PTE6S2		PT612	6TM-S2	
C69	.05	600	A194-160	P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C70	.01	600	A194-155	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C71	.05	600	A194-160	P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C72	.05	600	A194-160	P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C73	.001	600	A194-145	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C74	.001	600	A194-145	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C75	.005	600	A194-151	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C76	.005	600	A194-151	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C77	.05	600	A194-160	P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C78	3900	500	A195-161	1464-004		1DR5D4		MCB465	MS-24	
C79	390	500	A190-137	1469-0004		5R5T4		MCB243	MS-34	
C80	390	500	A190-137	1469-0004		5R5T4		MCB243	MS-34	
C81	270	500	A190-133	1469-0003		5R5T3		MCB241	MS-33	
C82	20	1500	A19172							Note 2
C83	18	2500	A19146					MCP4I0		
C84	.05	600	A194-160	P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C85	.1	600	A194-162	P688-1		PTK6P1		PT601	6TM-P1	
C86	.05	600	A194-160	P688-05		PTE6S5		PT615	6TM-S5	
C87	500	20000	A198-3	HV20C	TV3-502	MM-C20T5	413-501		20DK-T6	
C88	220	1000	A19180					MCK322		
C89	.01	600	A19106	6892ZGXY-01			PJ631	PT611	6TM-S1	
C90	.01	600	A19106	6892ZGXY-01			PJ631	PT611	6TM-S1	

Note 1. Some Models use 82MMF in this application.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE Part No.	REPLACEMENT DATA: IRC Part No.	REPLACEMENT DATA: CLAROSTAT Part No.	REPLACEMENT DATA: CENTRALAB Part No.	REPLACEMENT DATA: MALLORY Part No.	INSTALLATION NOTES
R1A	5000Ω	½	A24142	QJ-363 *	RTV-361		UF53R	Contrast-Panel
B	250KΩ	½					UR254A	Volume- Rear
C	Switch						US-26	Attach to RIB
R2A	100KΩ	½	A24110	QH-128	AG-49-S	AB-40	SU-41	Brightness
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R2A
R3A	50000Ω	½	A24141	QH-141	AG-19-S	AB-39	SU-14	Horiz. Hold
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R3A
R4A	1 Meg	½	A24112	QH-137	AG-61-S	AB-59	SU-54	Vert. Hold
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R4A
R5A	1 Meg	½	A24112	QH-137	AG-61-S	AB-59	SU-54	Focus
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R5A
R6A	10000Ω	½	A24114		AG-15-S		U-8	Vert. Linearity
B	Shaft		Not Req.		FKS-1/4		Not Req.	Attach to R6A
R7A	5 Meg	½	A24111	QH-141	AG-85-S	AB-87	SU-67	Height
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R7A
R8A	100Ω	2	A24116	W-100	A43-100	VK-121	R100L	Horiz. Centering-Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R8A
R9	20Ω	2	A24118	W20X10	RTV-98	8WT-901	R20CT.	Vert. Centering-Tap ⑤ 10Ω-Wire Wound

* CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B17-L14 & P1-106 (Panel)
B13-130 & R1-126 (Rear) & SWITCH 76-1

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: SILVERTONE Part No.	REPLACEMENT DATA: IRC Part No.	NOTES
R10	4700Ω	½	A231-1165	BTS-4700	
R11	13KΩ	½	A231-2277	BTS-13K	
R12	2200Ω	½	A231-1157	BTS-2200	
R13	220KΩ	½	A231-1205		
R14	15KΩ	½	A231-2277	BTS-15K	
R15	10KΩ	½	A231-1173	BTS-10K	
R16	3900Ω	½	A231-1163	BTS-3900	
R17	33Ω	½	A231-1113		
R18	82Ω	½	A231-1123	BTS-82	
R19	330Ω	½	A231-1137	BTS-330	
R20	47KΩ	½	A231-1189		
R21	47Ω	½	A231-1117		
R22	220Ω	½	A231-1133	BTS-220	
R23	82000Ω	½	A231-1197		
R24	150Ω	½	A231-1129	BTS-150	
R25	220Ω	½	A231-1133	BTS-220	
R26	100KΩ	½	A231-1197	BTS-100K	
R27	15KΩ	½	A231-1177	BTS-15K	
R28	4700Ω	½	A231-1165	BTS-4700	
R29	82Ω	½	A231-1123		
R30	220Ω	½	A231-1133	BTS-220	
R31	4700Ω	½	A231-1165	BTS-4700	
R32	3300Ω	1	A232-1161	BTA-3300	
R33	1 Meg	½	A231-1221	BTS-1 Meg	
R34	150Ω	½	A231-1129	BTS-150	
R35	120Ω	½	A231-1127	BTS-120	
R36	11KΩ-5%	2	A233-74	BTS-11K-5%	
R37	18KΩ	2	A233-1179	BTS-18K	
R38	270KΩ	½	A231-1207	BTS-270K	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: SILVERTONE Part No.	REPLACEMENT DATA: IRC Part No.	NOTES
R39	1 Meg	½	A231-1221	BTS-1 Meg	
R40	100KΩ	½	A231-1197	BTS-100K	
R41	100KΩ	½	A231-1197	BTS-100K	
R42	1800Ω	½	A231-1165	BTS-1800	
R43	47KΩ	½	A231-1189	BTS-47K	
R44	10 Meg	½	A231-1245	BTS-10 Meg	
R45	470KΩ	½	A231-1213	BTS-470K	
R46	470KΩ	½	A231-1213	BTS-470K	
R47	330Ω	½	A232-1137	BTA-330	
R48	3250Ω	7	A2134-4	1 3/4A-3500	
R49	27KΩ	½	A231-1183	BTS-27K	
R50	68KΩ	½	A231-1193	BTS-68K	
R51	12KΩ	½	A231-1175	BTS-12K	
R52	470KΩ	½	A231-1213	BTS-470K	
R53	2.2Meg	½	A231-1229	BTS-2.2Meg	
R54	2.2Meg	½	A231-1229	BTS-2.2Meg	
R55	8200Ω	½	A231-1171	BTS-8200	
R56	22KΩ	½	A231-1181	BTS-22K	
R57	1 Meg	½	A231-1221	BTS-1 Meg	
R58	22KΩ	½	A231-1181	BTS-22K	
R59	1 Meg	½	A231-1221	BTS-1 Meg	
R60	2700Ω	½	A231-1159	BTS-2700	
R61	3900Ω	½	A231-1163	BTS-3900	
R62	3900Ω	½	A231-1163	BTS-3900	
R63	22KΩ	½	A231-1181	BTS-22K	
R64	22KΩ	½	A231-1181	BTS-22K	
R65	8200Ω	½	A231-1171	BTS-8200	
R66	47KΩ	½	A231-1189	BTS-47K	
R67	1.6Meg-5%	1	A232-127	BTA-1.6Meg-5%	

RESISTORS (cont)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: SILVERTONE Part No.	REPLACEMENT DATA: IRC Part No.	NOTES
R68	6800Ω	½	A231-1169	BTS-6800	
R69	470KΩ	½	A231-1213	BTS-470K	
R70	47KΩ	½	A231-1189	BTS-47K	
R71	1.5Meg	½	A231-1225	BTS-1.5Meg	
R72	1800Ω	½	A231-1155	BTS-1800	
R73	47KΩ	1	A232-1189	BTA-47K	
R74	150KΩ	1	A232-1201	BTA-150K	
R75	3300Ω	2	A233-1161	BTB-3300	
R76	3300Ω	2	A233-1161	BTB-3300	
R77	2.2Meg	1	A232-1229	BTA-2.2Meg	
R78	33KΩ	½	A231-1185	BTS-33K	
R79	100KΩ	½	A231-1197	BTS-100K	
R80	100KΩ	½	A231-1197	BTS-100K	
R81	3.3Meg	½	A231-1233	BTS-3.3Meg	
R82	470KΩ	½	A231-1213	BTS-470K	
R83	22KΩ	½	A231-1181	BTS-22K	
R84	5600Ω	½	A231-1167	BTS-5600	

When V19 is 1X2A, R82 is 2.4Ω.
Note 1. Some models use a .56Ω resistor in this application.

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: SILVERTONE Part No.	REPLACEMENT DATA: IRC Part No.	NOTES
R85	1800Ω	½	A231-1155	BTS-1800	
R86	100KΩ	½	A231-1197	BTS-100K	
R87	220KΩ	½	A231-1205	BTS-220K	
R88	270KΩ	½	A231-1207	BTS-270K	
R89	470KΩ	½	A231-1213	BTS-470K	
R90	82Ω	½	A231-1123		
R91	220Ω	2	A233-1133	BW-2-220	
R92	.51Ω	½			Note 1
R93	1 Meg	2	A233-3321		
R94	15KΩ	1	A232-1177	BTA-15K	
R95	2250Ω	15	A2134-16	2D-2250	
R96	4700Ω	2	A233-1165	BTB-4700	
R97	6800Ω	2	A233-1169	BTB-6800	
R98	1.2Ω	1	A231SI		
R99	60Ω	10	A23134-2		
R100	10KΩ	½	A231-1173	BTS-10K	

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: SILVERTONE Part No.	REPLACEMENT DATA: STANCOR Part No.	REPLACEMENT DATA: MERIT Part No.	REPLACEMENT DATA: CHICAGO Part No.	REPLACEMENT DATA: TRIAD Part No.
T1	117VAC ⑫ 1.9A	630VCT ⑪ .230ADC	5VAC ⑪ 3A	6.3VAC ⑪ 1.2A	A-10109	P-8171	P-3069		R-1985
				Sec. 4 6.3VAC ⑨ 9A					

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: SILVERTONE Part No.	REPLACEMENT DATA: STANCOR Part No.	REPLACEMENT DATA: MERIT Part No.	REPLACEMENT DATA: CHICAGO Part No.	REPLACEMENT DATA: TRIAD Part No.	NOTES
T2	160Ω	950Ω	B-10106	A-8111	A-3000	TBO-5③	A-97X ③	Vert. osc. trans.
			A-10106 ⑦					
T3	510Ω top ④ 80Ω	18Ω top ⑤ 12Ω	A-10136	A-8130④⑤	HVO-X7 ⑥	TFB-5④⑦	D-14④⑤	Horiz. output trans.
		Sec #2 3.15Ω top ⑤ .15Ω						
		Sec. #3 9Ω						
T4	2KΩ	5.6Ω	A-10152-1					Vert. output trans.
T5A	12Ω		A-28322-1	DY-8A	MDF-70	TY-3	A-105X	Horiz. deflection coils.
B	53Ω		A-28278-3 ⑦				Y-12	Vert. deflection coils

① Alternate Vert. Osc. Trans.
② Mount on top of chassis.
③ Drill one new mounting hole.
④ Drill new mounting holes.
⑤ Use with width coil WC-5.
⑥ Use with width coil MWC-1.
⑦ Use width coil (with AGC Winding) with approx. 4-29 milliheary range.
⑧ Use with width coil WC-11
⑨ Alternate deflection yoke.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SILVERTONE Part No.	REPLACEMENT DATA: STANCOR Part No.	REPLACEMENT DATA: MERIT Part No.	REPLACEMENT DATA: CHICAGO Part No.	REPLACEMENT DATA: TRIAD Part No.	NOTES
T6	4.8KΩ	3.15Ω	382Ω	.83Ω	38G53	A-3877 ①	A-2930 ①	RO-9 ①	S-3X ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: SILVERTONE Part No.	REPLACEMENT DATA: JENSEN Part No.	REPLACEMENT DATA: QUAM Part No.	NOTES
SP1	6"	PM	3.15Ω	A5986 A5812A ①	ST-105 Mod. P5-X	5A07	① Alternate 6" PM speaker used in Model 2150A.

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA: SILVERTONE Part No.	REPLACEMENT DATA: STANCOR Part No.	REPLACEMENT DATA: MERIT Part No.	REPLACEMENT DATA: CHICAGO Part No.	REPLACEMENT DATA: TRIAD Part No.
L1	.230A	61Ω	1.83HY	A-1406	C-2326 ①	C-2996 ①	TR-1733 ①	C-21X

① Drill one new mounting hole.

SILVERTONE MODELS 2120A, 2140 (Ch. 110.817-1), 2150A (Ch. 110.820-1)

PARTS LIST AND DESCRIPTIONS (Continued)

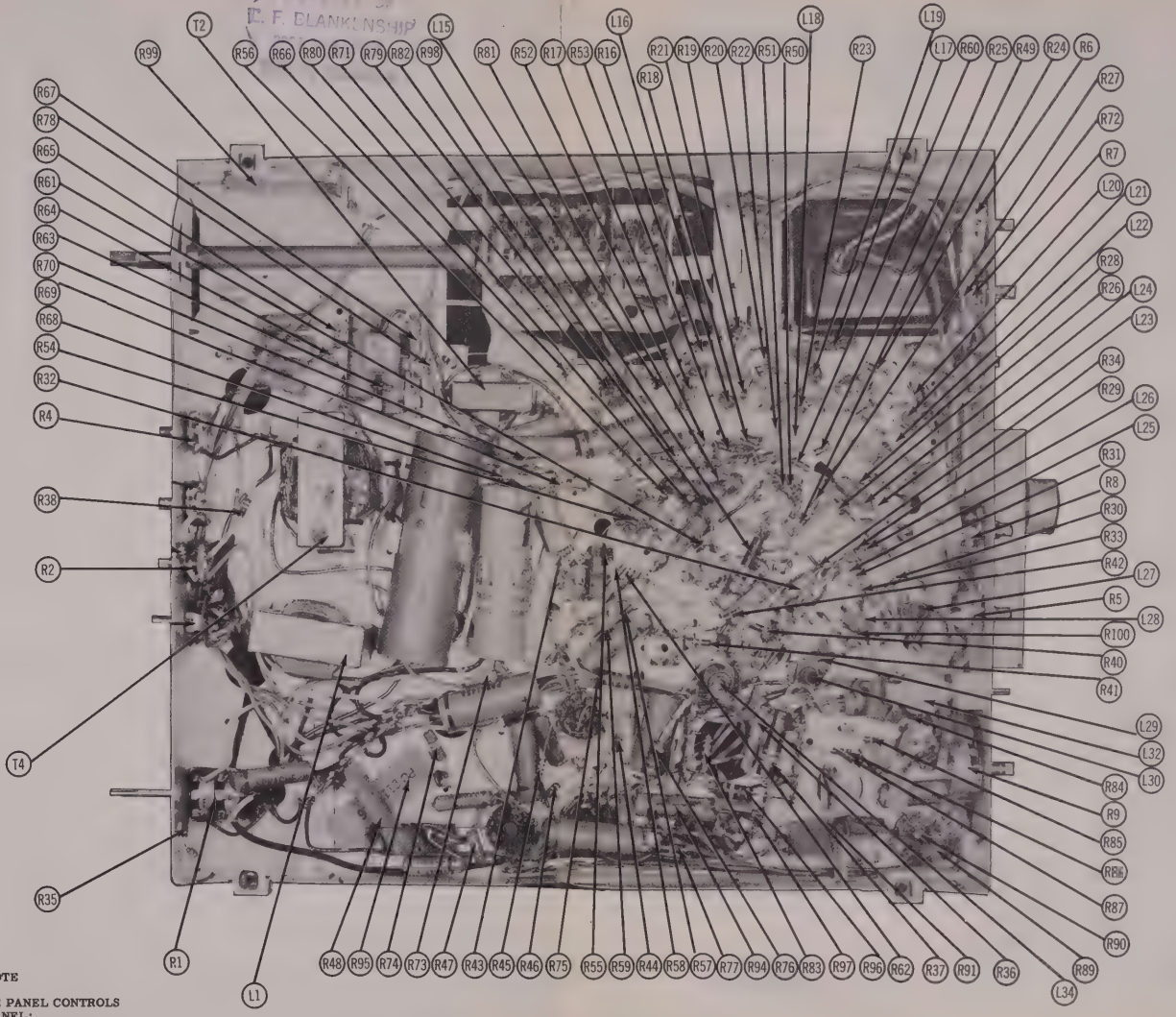
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	SILVERTONE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L2	Ant. Trans.	0Ω	0Ω	A28280-24				
L3	Ant. Coils	0Ω						
L4	Ant.Shunt Coils	0Ω						
L5	Ant. Coil	0Ω		A28830-20				Channel 13
L6	RF Coil	0Ω		A28280-21				Channel 13
L7	RF Coils	0Ω						
L8	Mixer Grid Coil	0Ω						Channel 13
L9	Mixer Grid Coils	0Ω						Channel 13
L10	Osc. Coil	0Ω		A28280-22				
L11	Osc. Coils	0Ω						
L12	Fil. Choke	0Ω		A28280-23				
L13	RF Choke	1.2Ω						
L14	1st. Video IF	.6Ω		A28280-19	17-1004	TV-103 ■	6189■	
L15	21.25MC Trap	0Ω		A28314	20-1021	TV-112■	6171■	
L16	2nd. Video IF	.2Ω		A3392	17-1003	TV-102■	6188■	
L17	Fil. Choke	.27Ω		A28276	19-3001	TV-189	6175	.82Microhenerie (IRC Part #CL-1)
L18	RF Choke	2.7Ω		A28253	19-3036	TV-180	6176	35 Microheneries
L19	3rd. Video IF	.2Ω		A3392	17-1004	TV-103■	6189■	
L20	Fil. Choke	.27Ω		A28276	19-3001	TV-189	6175	.82Microhenerie
L21	4th. Video IF	.2Ω		A3392	17-1003	TV-102■	6188■	(IRC Part #CL-1)
L22	Cathode Choke	2.7Ω		A28253	19-3036	TV-180	6176	35 Microheneries
L23	Series Peaking Coil	6.5Ω		A28255-2	19-3180	TV-184	6180	194Microheneries
L24	Shunt Peaking Coil	7.5Ω		A28255-1	19-3125	TV-181	6177	130Microheneries
L25	Series Peaking Coil	6.5Ω		A28255-2	19-3180	TV-184	6180	194Microheneries
L26	Shunt Peaking Coil	7.5Ω		A28255-1	19-3125	TV-181	6177	130Microheneries
L27	4.5MC Trap	2.6Ω		A28286	20-1004	TV-151	1470	
L28	Series Peaking Coil	7.5Ω		A28255-1	19-3125	TV-181	6177	130Microheneries
L29	Shunt Peaking Coil	9.5Ω		A28255-4	19-3300		6155	314Microheneries
L30	Sound IF	2.6Ω		A28286	17-3400	TV-151	1470	
L31	Ratio Det.	5.5Ω	2ΩCT	A1201*	17-3497	TV-115	6205	Tertiary Wdg. -.5Ω
L32	Horiz. Osc.	60Ω		A28263	19-1576	TV-163	6210	
L33	Width Coil	1Ω		A28279-1		MWC-2■		
L34	Horiz. Lin.	27Ω		A28292		MWC-1■	6316	

* Alternate Part #A1202.
■ Enlarge mounting hole.

MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M1	RF Tuner	A54114	Less Tubes
M2	Ion Trap	A3206	
M3	Switch	A37105	TV-Phono
B2	Trimmer	A1772	Horiz. Drive (25-280MMF)
	Knob	A39242-1	Channel Selector
	Knob	A39240-3	Fine Tuning
	Knob	A39241-1	Off/On Volume
	Knob	A39239-3	Contrast
	Knob	A39249	TV-Phono



NOTE

SOME MODELS HAVE PANEL CONTROLS R2 & R4 ON REAR PANEL:

CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PHOTOFACT* Folder

*TRADE MARK

SILVERTONE MODELS 3171A, 4140, 4143, 4145, 4150, 4153, 4155 (Ch. 528.747,-1)

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MODEL 3171A

SILVERTONE MODELS 3171A, 4140, 4143, 4145, 4150, 4153, 4155 (Ch. 528.747,-1)

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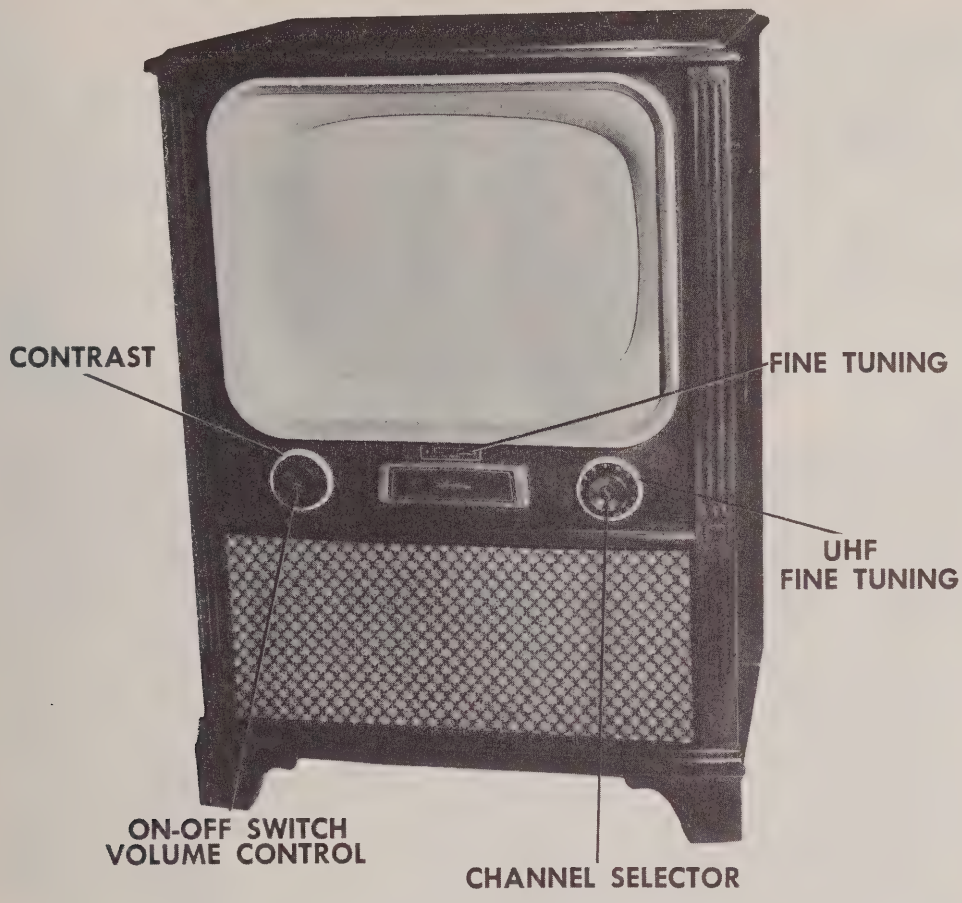
PHOTOFACT* Folder
*TRADE MARK

SILVERTONE MODELS 3171A, 4140, 4143 4145, 4150, 4153, 4155 (Ch. 528.247, -1



SILVERTONE MODELS 3171A, 4140, 4143, 4145, 4150, 4153, 4155 (Ch. 528.247, -1)

SILVERTONE MODEL 3171A

TRADE NAME	Silvertone Models 3171A, 4140, 4143, 4145, 4150, 4153, 4155 (Ch. 528.247, -1)
SUPPLIER	Sears, Roebuck & Co., 925 S. Homan Ave., Chicago, Ill.
TYPE SET	Television Receiver
TUBES	Twenty-three
POWER SUPPLY	110-120 Volts AC-60 Cycles RATING 2 Amp. @ 117 Volts AC
TUNING RANGE-	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 26.25MC, Sound IF 21.75MC (Intercarrier)

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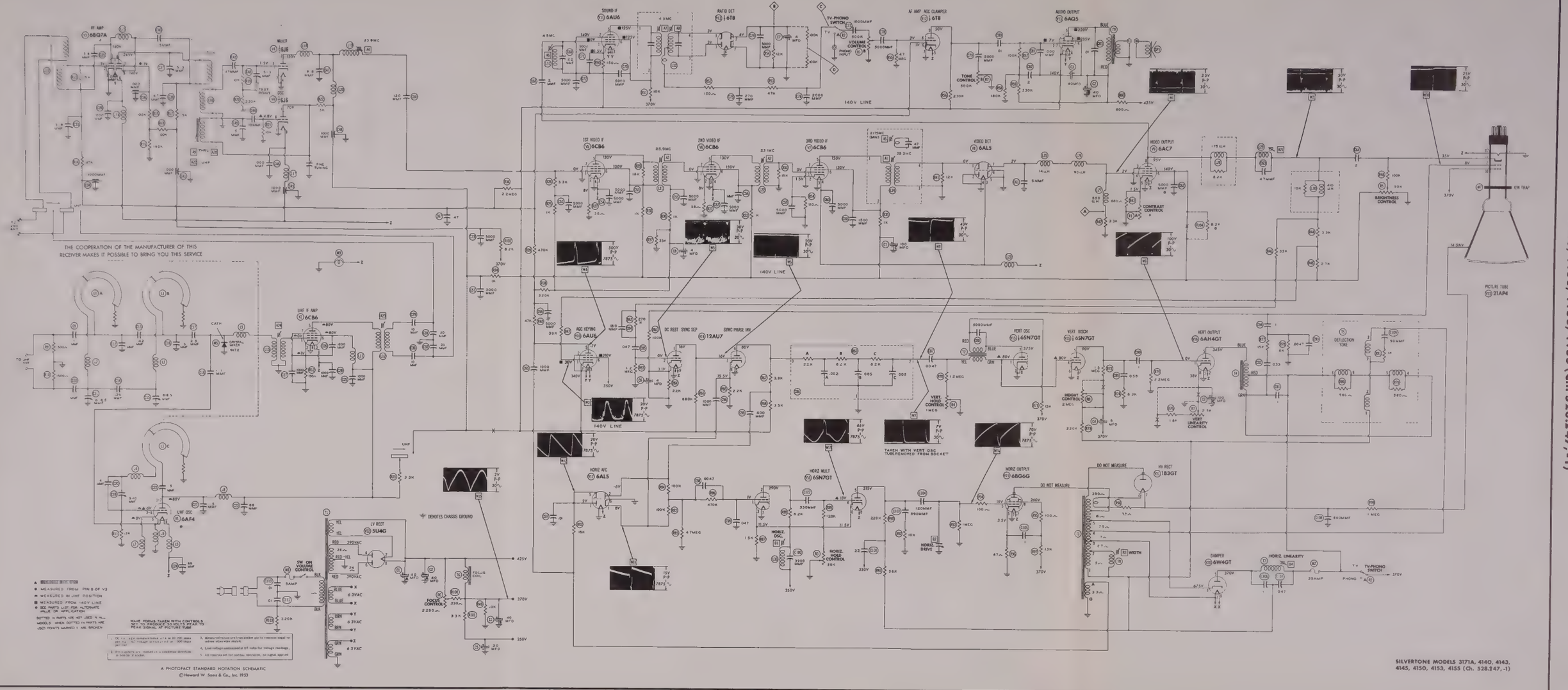
SILVERTONE MODELS 3171A, 4140, 4143, 4145, 4150, 4153, 4155 (Ch. 528.247, -1)
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
RF AMP V1 6BQ7A
MIXER V2 6U6
V3 6U6
SOUND IF V11 6AU6
RATIO DET V12 6T8
TV-PHONO SWITCH
AF AMP AGC CLAMPER V13 6T8
AUDIO OUTPUT V14 6AQ5
1ST VIDEO IF V15 6CB6
2ND VIDEO IF V16 6CB6
3RD VIDEO IF V17 6CB6
VIDEO DET V18 6AL5
VIDEO OUTPUT V19 6AC7
CONTRAST CONTROL
BRIGHTNESS CONTROL
ION TRAP
PICTURE TUBE V22 21AP4
140V LINE
UHF V1 6JA
UHF V2 6C86
UHF OSC V3 6AF4
CRYSTAL DIODE 1N72
AGC KEYING V10 6AU6
DC REST SYNC SEP V14 12AU7
SYNC PHASE INV
VERT OSC V15 6SN7GT
VERT DISCH V20 6SN7GT
VERT OUTPUT V16 6AH4GT
VERT HOLD CONTROL 1 MEG
HEIGHT CONTROL 2 MEG
VERT LINEARITY CONTROL
DEFLECTION YOKE
HORIZ AFC V17 6AL5
HORIZ MULT V18 6SN7GT
HORIZ OSC.
HORIZ HOLD CONTROL 50K
HORIZ DRIVE
HORIZ OUTPUT V19 6BG6G
DO NOT MEASURE
HV RECT V21 1B3GT
WIDTH
DAMPER V6 6W4GT
HORIZ. LINEARITY
TV-PHONO SWITCH
LV RECT V20 5U4G
SW. ON VOLUME CONTROL
FOCUS CONTROL 2.25 MEG
FOCUS COIL
TAKEN WITH VERT OSC TUBE REMOVED FROM SOCKET
DENOTES CHASSIS GROUND
WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE 30 VOLTS PEAK TO PEAK SIGNAL AT PICTURE TUBE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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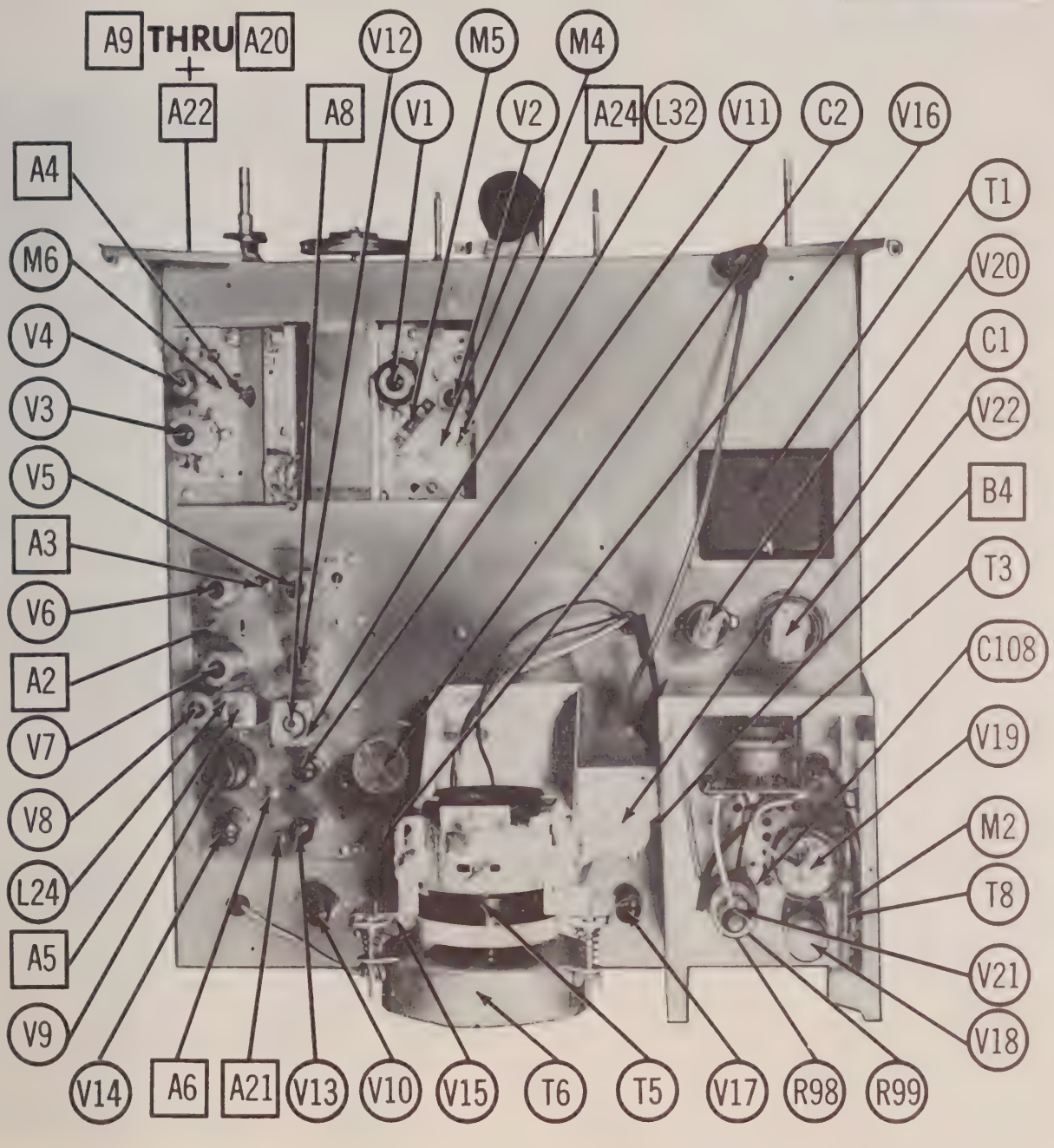
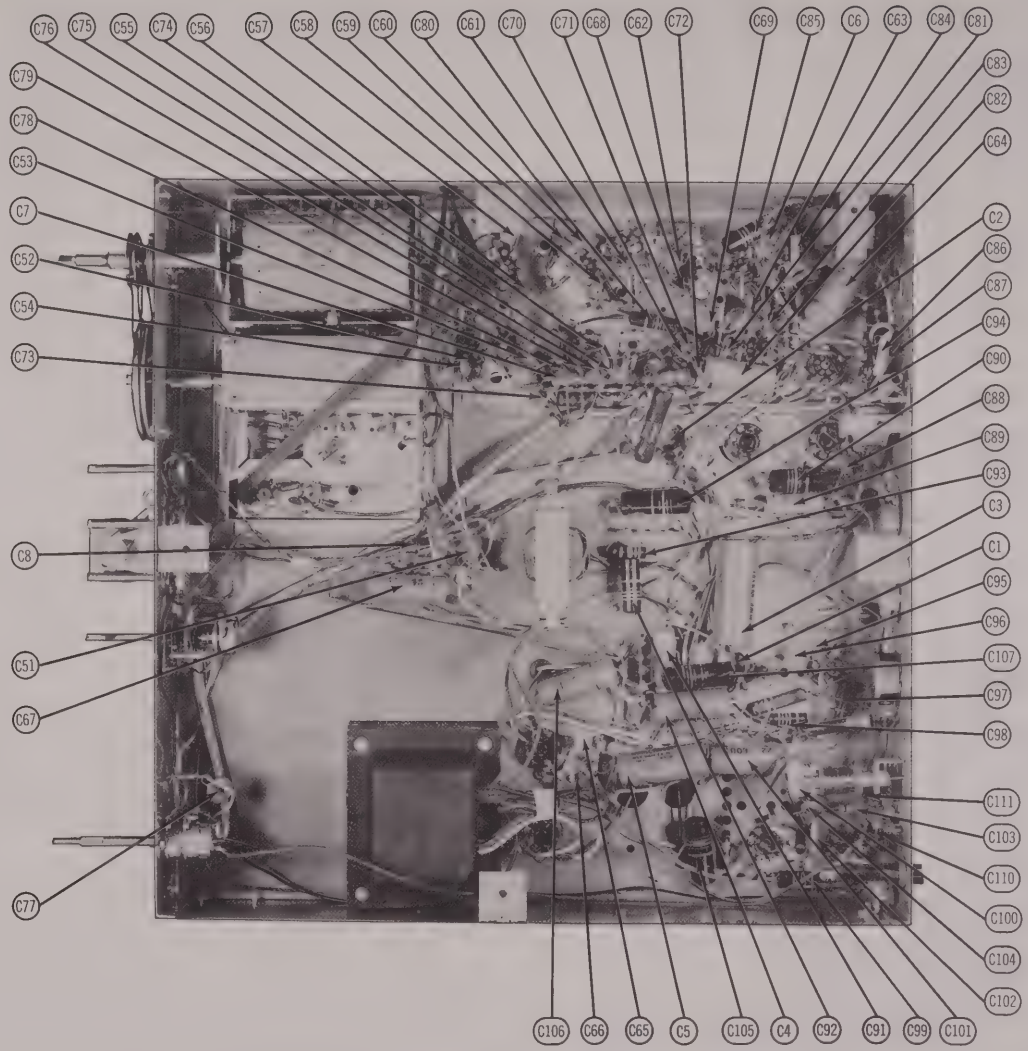
SILVERTONE MODELS 3171A, 4140, 4143, 4145, 4150, 4153, 4155 (Ch. 528.247, -1)

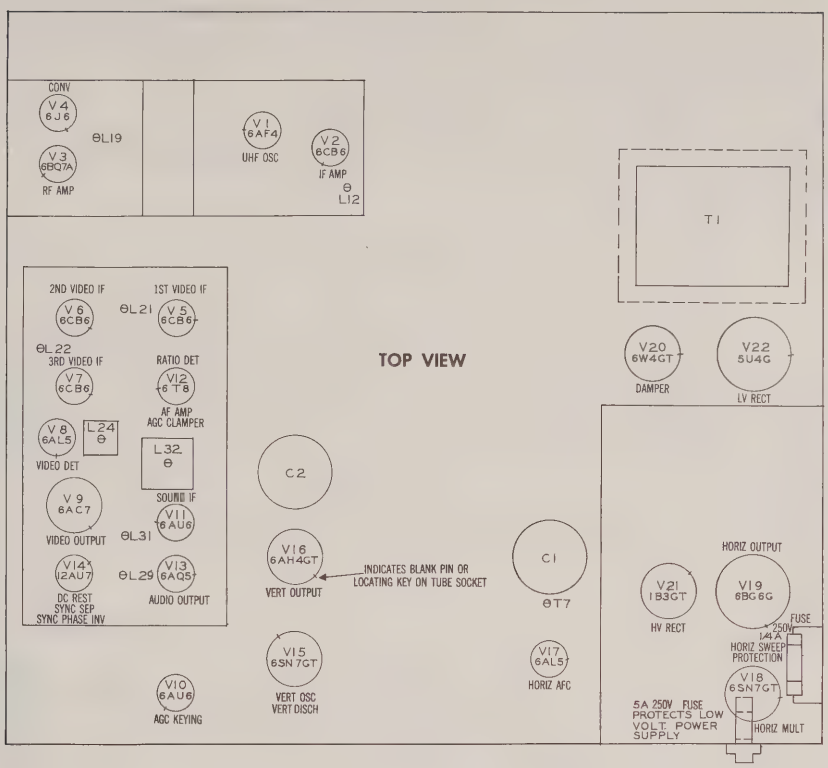


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - **V22, Fuse (M1)**

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - **V4, V5, V6, V7, V8, V13 (V1 UHF Only)**
No pic, no sound, has snow - **V3, V4, V5**
No pic, has sound, has raster - **V9, V23**
Has pic, no sound - **V11, V12, V13**
Overloaded picture - **V10**

SYNC FAILURE
No vert. sync - **V14, V15, V16**
No horiz. sync - **V14, V17, V18**
No vert. or horiz. sync - **V14**

SWEEP FAILURE
No raster, has sound - **V18, V19, V20, V21, V23, Fuse (M2)**
No vertical deflection - **V15, V16**
Poor vert. linearity or foldover - **V15, V16**
Poor horiz. linearity or foldover - **V18, V19, V20**
Narrow picture - **V18, V19, V20, V21, V22, V23**
Vert. off freq. - **V14, V15, V16**
Horiz. off freq. - **V14, V17, V18**

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Remove the converter tube (V4) from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over dummy converter tube. Low side to chassis.	25.2 MC (Unmod.)	Any	DC probe to point (A). Common to chassis.	A1	Adjust for maximum deflection.
2.	"	"	23.1MC	"	"	A2	"
3.	"	"	25.9MC	"	"	A3	"
4.	"	"	23.9MC	"	"	A4	"
5.	"	"	21.75MC	"	"	A5	Adjust for MINIMUM deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	21.75MC 26.25MC	Any	Vert. Amp. to point (A). Low side to chassis.		Check for response curve similar to Fig. 1. If necessary, retouch A1 thru A4 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from point (B) to chassis. The junction of these two resistors is alignment point (D) as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.01MFD	High side to point (A). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to point (B). Common to chassis.	A6, A7	Adjust for maximum deflection.
8.	"	"	"	"	DC probe to point (C). Common to point (D).	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.01MFD	High side to point (A). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point (B). Low side to chassis.	A6, A7	Disconnect stabilizer capacitor (C7). Adjust for maximum amplitude and symmetry as in Fig. 2.
8.	"	"	"	"	"	Vert. Amp. to point (C). Low side to chassis.	A8	Reconnect stabilizer capacitor (C7). Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 3. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace original 6J6 in its socket.
The channel oscillator adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. to point (A). Low side to chassis.	A9	Adjust to place sound marker in trap notch as in Fig. 4. Video marker should be at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A10	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A11	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A12	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A13	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A14	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A15	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A16	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A17	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A18	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A19	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A20	

VHF, RF AND MIXER ALIGNMENT

The RF and Mixer portion of this receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

4.5MC TRAP ALIGNMENT

Tune in a TV station and examine picture for evidence of 4.5MC interference. If any is noted adjust A21 to minimize it.

ALIGNMENT INSTRUCTIONS (cont)

UHF TUNER ALIGNMENT

Remove UHF oscillator tube 6AL4 (V1) from its socket.
Set channel switch to UHF position.
UHF oscillator slug is accessible through same hole as VHF oscillator slugs.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	Two 120Ω Carbon Resistors	Across UHF antenna terminals with 120Ω in each lead.	124MC (Unmod.)	UHF	DC probe to point (A) Common to chassis.	A22	Adjust for maximum deflection. Replace 6AL4.
11.	"	"	See remarks	See remarks		A23, A24	Set generator to center frequency of highest UHF channel in service area. Tune UHF fine tuning to generator signal. Adjust A23, A24 for maximum deflection.

FIELD ADJUSTMENT
Tune UHF receiver to a UHF station and adjust A23 and A24 for best sound and picture.

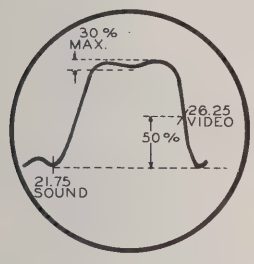


FIG. 1

FIG. 2

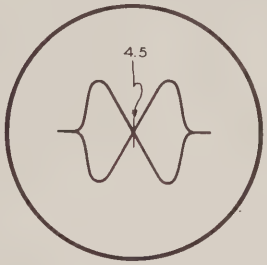


FIG. 3

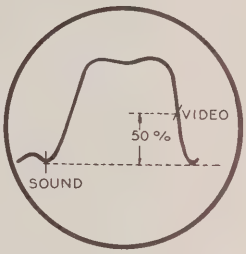
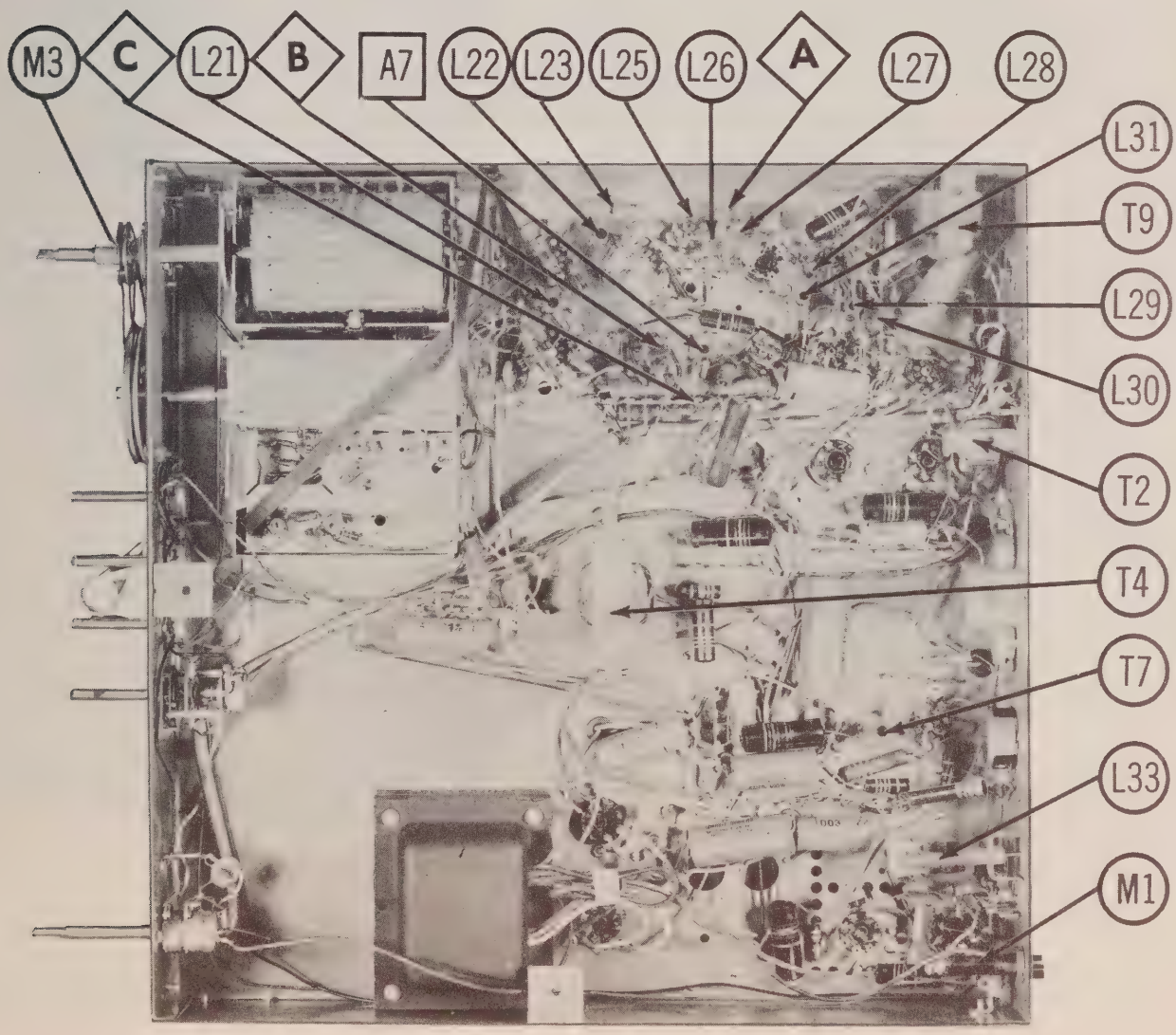


FIG. 4

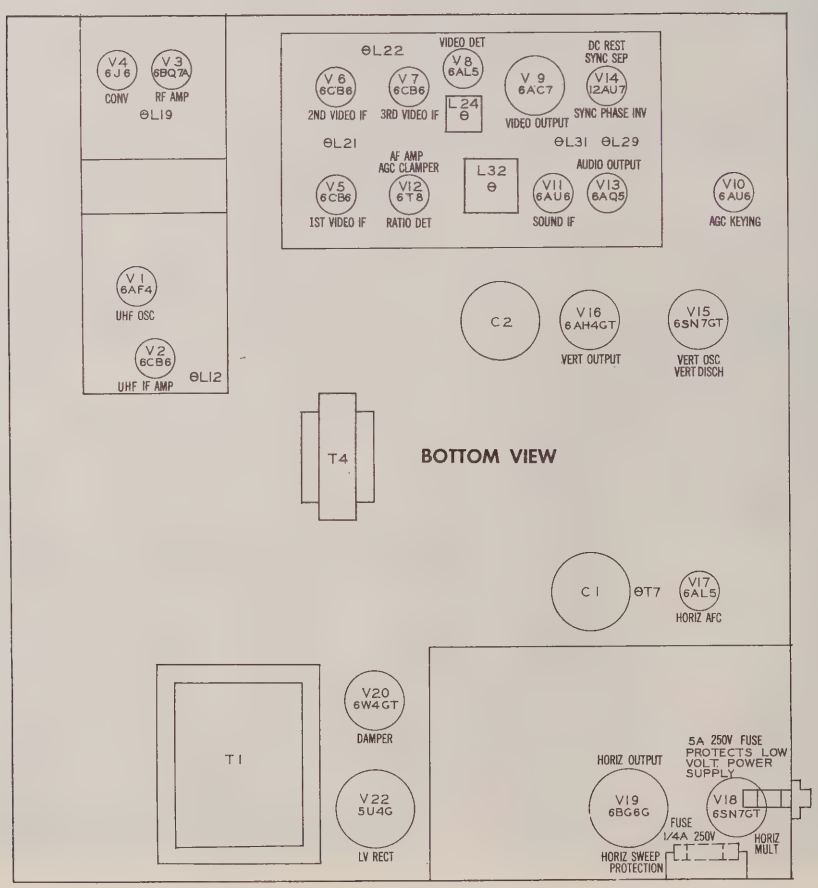


CHASSIS BOTTOM VIEW-TRANS., INDUCTOR & ALIGN. IDENTIFICATION

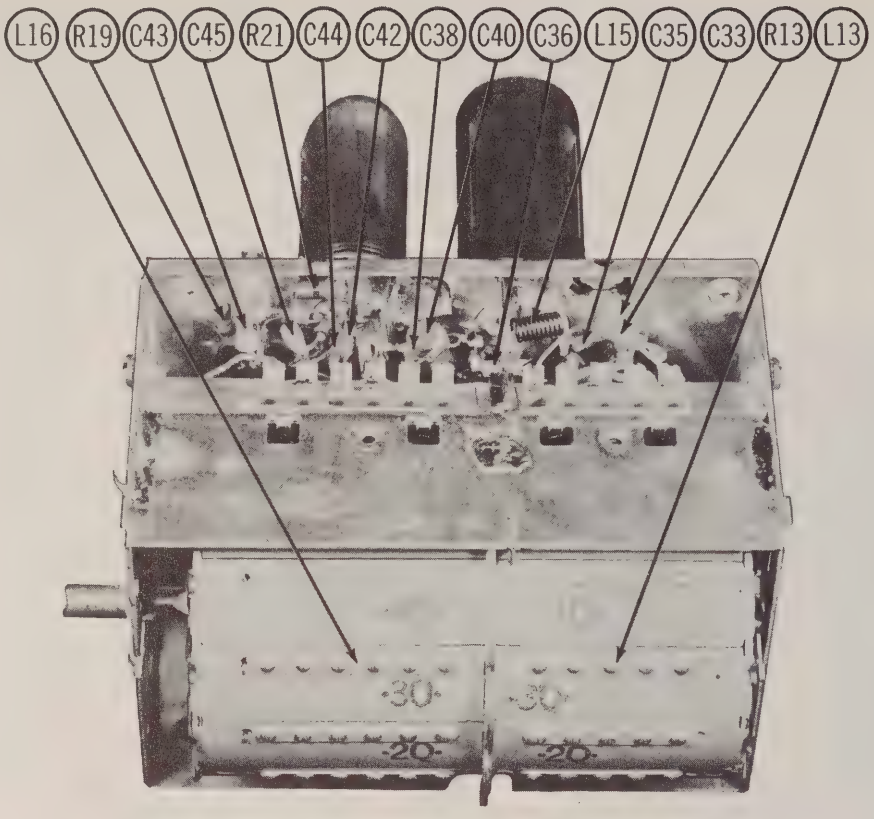
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AF4	‡▲3.3KΩ	12KΩ	.1Ω	.2Ω	0Ω	12KΩ	‡▲3.3KΩ		
V 2	6CB6	0Ω	150Ω	.1Ω	0Ω	‡▲3.3KΩ	‡▲3.3KΩ	150Ω		
V 3	6BQ7A	INF	670KΩ	0Ω	.1Ω	0Ω	†10KΩ	†160KΩ	INF	0Ω
V 4	6J6	‡16KΩ	‡1KΩ	.1Ω	0Ω	230KΩ	10KΩ	0Ω		
V 5	6CB6	37KΩ	56Ω	.1Ω	0Ω	‡1KΩ	‡1KΩ	0Ω		
V 6	6CB6	34KΩ	56Ω	0Ω	.1Ω	‡1KΩ	‡1KΩ	0Ω		
V 7	6CB6	.3Ω	150Ω	0Ω	.1Ω	‡1KΩ	‡1KΩ	0Ω		
V 8	6AL5	.7Ω	0Ω	.1Ω	0Ω	0Ω	0Ω	3.3KΩ		
V 9	6AC7	0Ω	0Ω	0Ω	3.3KΩ	155Ω	‡0Ω	.1Ω	‡6KΩ	
V 10	6AU6	‡41KΩ	‡0Ω	‡0Ω	‡.1Ω	300KΩ	†3.6KΩ	‡0Ω		
V 11	6AU6	‡0Ω	‡0Ω	‡0Ω	‡.1Ω	†10.3KΩ	†10.3KΩ	‡150Ω		
V 12	6T8	INF	12KΩ	INF	0Ω	.1Ω	■620KΩ	0Ω	4.7Meg	‡270KΩ
V 13	6AQ5	230KΩ	40KΩ	‡0Ω	‡.1Ω	†1.4KΩ	†1.1KΩ	230KΩ		
V 14	12AU7	‡680KΩ	1.2Meg	22KΩ	0Ω	0Ω	‡7.2KΩ	‡680KΩ	2.2KΩ	.1Ω
V 15	6SN7GT	1.5Meg	†15.5KΩ	0Ω	1.5Meg	■2.7Meg	0Ω	.1Ω	0Ω	
V 16	6AH4GT	2.2Meg	.1Ω	INF	INF	†1.4KΩ	INF	0Ω		
V 17	6AL5	4.8Meg	4.8Meg	0Ω	.1Ω	15KΩ	0Ω	15KΩ		
V 18	6SN7GT	5.1Meg	†12KΩ	1.5KΩ	135KΩ	■275KΩ	1.5KΩ	0Ω	.1Ω	
V 19	6BG6G	INF	.1Ω	47Ω	†15.3KΩ	1Meg	1Meg	0Ω	†15.4KΩ	Top Cap ■16Ω
V 20	6W4GT	INF	INF	INF	†340Ω	†355Ω	INF	■14.5Ω	■14.5Ω	
V 21	1B3GT	PINS 1 - 8		HAVE	INF	RESISTANCE				Top Cap ■405Ω
V 22	5U4G	INF	10.3KΩ	INF	25.6Ω	INF	23.8Ω	INF	10.3KΩ	
V 23	21AP4	0Ω	120KΩ	PIN 10 †340Ω	PIN 11 115KΩ	PIN 12 .1Ω				

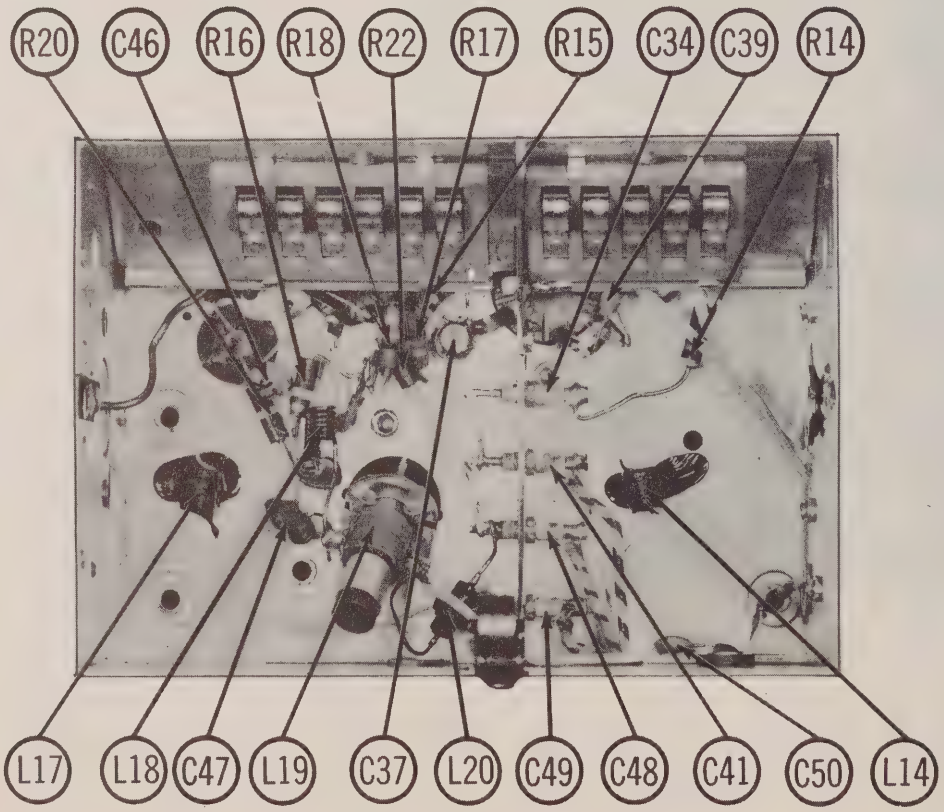
ALL MEASUREMENTS TAKEN IN "VHF" POSITION UNLESS OTHERWISE SPECIFIED.
▲ MEASURED IN "UHF" POSITION
† MEASURED FROM PIN 8 OF V22.
‡ MEASURED FROM 140V LINE
■ MEASURED FROM PIN 3 OF V20.



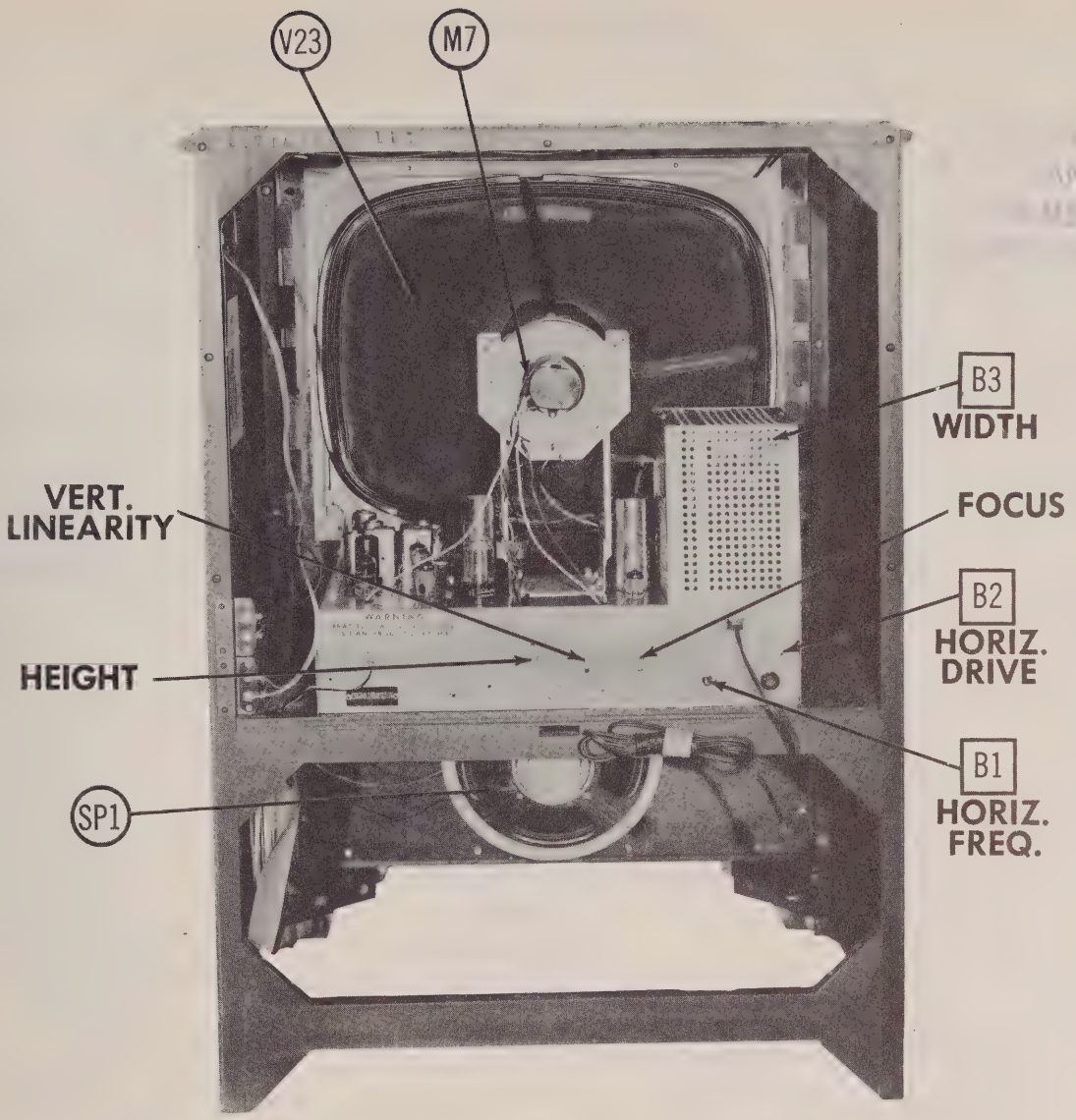
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn on the set and tune in a TV station, preferably a test pattern.

Set horizontal hold control at mid-range and adjust horizontal oscillator slug (B1) until the picture synchronizes horizontally. Make slight readjustments of B1 if necessary for best overall sync on all channels.

Adjust the horizontal drive trimmer (B2) counter clockwise as far as possible without the presence of vertical white lines or compression of the center of the picture.

Adjust width slug (B3) for a picture slightly wider than is necessary to fill the mask horizontally.

Adjust horizontal linearity control (B4) for a picture that is symmetrical from left to right.

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL

LOSS OF SWEEP

See "LOSS OF HIGH VOLTAGE".

INSUFFICIENT SWEEP

Check by substitution V18, V19, V20 and V22. Check waveform at W14.

If Satisfactory	If Unsatisfactory
Check C105, C106, C107, R95, R96, R97, T3, T5A, T7, T8 and other associated circuit components.	Check C103, C104, R92, R93, R94, horiz. drive trimmer (B2), and other associated circuit components.

DRIVE LINES

Check by substitution V18, V19 and V20. Check adjustment of horizontal drive trimmer (B2). Check waveform at W14.

If Satisfactory	If Unsatisfactory
Check T3, T5A, C106, C107, T7, T8 and other associated circuit components.	Check components associated with V18 and V19.

COMPRESSED LEFT SIDE

Check by substitution V18, V19 and V20. Check adjustment of width (B3) and horizontal linearity (B4). Check T3, T5A, T7, T8, C106, C107, C105 and other associated components.

FOLDS

Check by substitution V18, V19, and V20. Check C105, C106, C107, R95, R96, R97, T3, T5A, T7, T8 and other associated components.

XMAS TREE EFFECT

Substitute V18. Check L33 for shorted turns. Check C100 and C102.

VERTICAL

LOSS OF SWEEP

Check by substitution V15 and V16. Check waveform at W9.

If Satisfactory	If Unsatisfactory
Check T4, T5B, R76, R7, C2C and other associated components.	Check C89, C90, C87, C88, R8, R71, R72, R73 and other associated components.

INSUFFICIENT SWEEP

Check by substitution V15, V16 and V22. Proceed as outlined under "LOSS OF SWEEP".

COMPRESSED AT BOTTOM

Check by substitution V15 and V16. Check C2C , T4, T5B and other associated components.

COMPRESSED AT TOP

Check by substitution V15 and V16. Check C89, C90 and other associated components.

FOLDS

Check by substitution V15 and V16. Check C89, C90, T2, T4, T5b and other components associated with V15 and V16.

SYNC

HORIZONTAL

LOSS OF SYNC

Check by substitution V17 and V18. Check setting of horizontal hold control. Check adjustment of horizontal frequency (B1). Check waveform at W12.

If Satisfactory	If Unsatisfactory
Check C95, C96, C98 and other associated components.	Check C97, R82, T3 and other associated components.

CRITICAL HOLD

Check by substitution V14, V17 and V18. Proceed as outlined under "LOSS OF SYNC".

PULLING PICTURE

Check by substitution V17, V18, V19 and V14. Check horizontal AFC network. Check video IF, amplifier, and detector stages for 60 .cycle modulation do to heater to cathode leakage. Check signal at W5 for sync compression and/or signal overload.

VERTICAL

LOSS OF SYNC

Check by substitution V14 and V15. Check waveform W7.

If Satisfactory	If Unsatisfactory
Check C87, R70, R4, T2 and other associated components.	Check vertical integrator network and other components associated with V 14.

CRITICAL HOLD

Check by substitution V14 and V15. Proceed as outlined under "LOSS OF SYNC".

TRIGGERING

Check by substitution V14, V15 and V16. Check to see that all filament leads are dressed away from these stages.

VIDEO

LOSS OF VIDEO

Check C64, R5, R48 and picture tube (V23) and other associated components.

SOUND BARS

Check adjustment of fine tuning and local oscillator. Check 4.5MC trap adjustment (A21).

POOR RESOLUTION

Substitute V9. Check all bypass and coupling capacitors associated with V9. Check video IF alignment. Check components associated with the video IF stages.

POOR CONTRAST

Check by substitution V8 and V9. Check components associated with these stages. Check picture tube.

NEGATIVE PICTURE

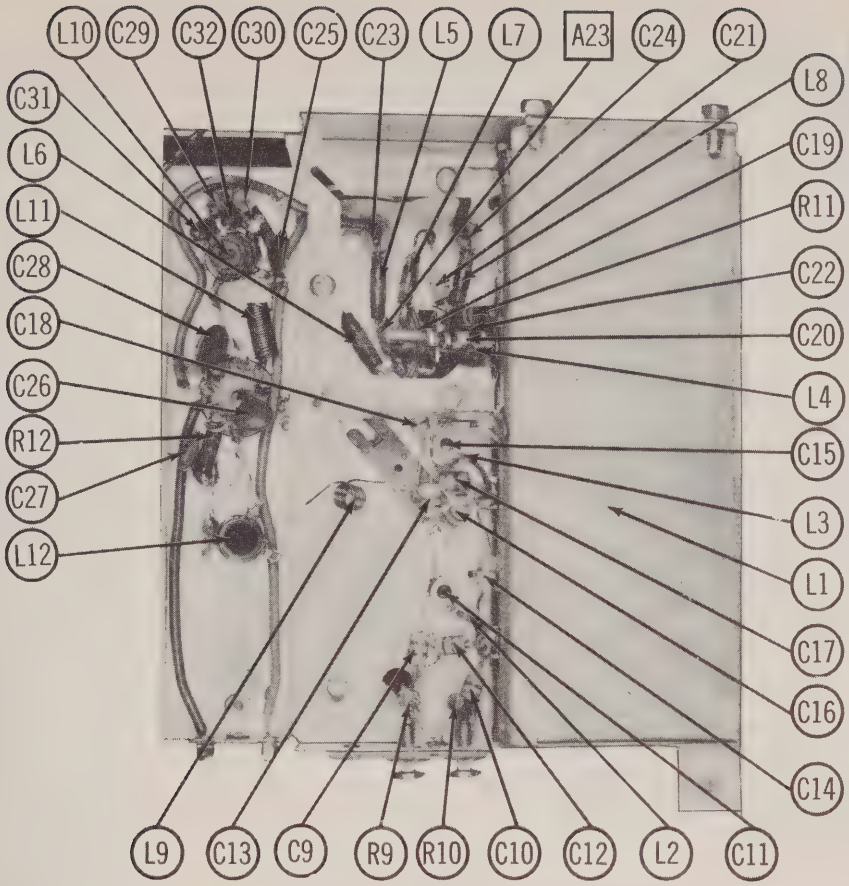
Check by substitution V10, V9 and V8. Check components associated with these stages.

SMEAR

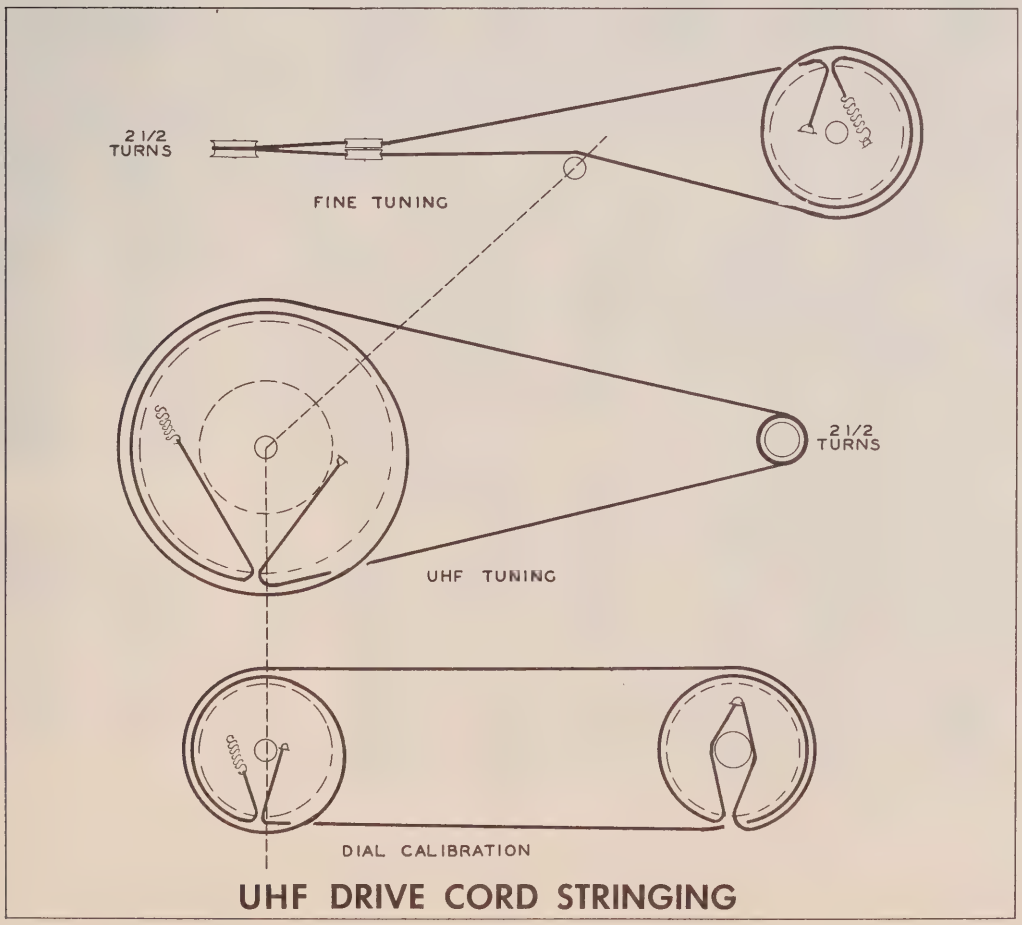
Check by substitution V8 and V9. Check L28 and L30 for open. Check C61 and C64 for leaky. Check R44, R45, R46, and R48. for change of value. Check picture tube and other associated components.

ONE WIDE BLACK BAR ACROSS PICTURE

Check tuner, video IF, video detector and video amplifier tubes for heater to cathode leakage.



UHF TUNER



UHF DRIVE CORD STRINGING

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1A	UHF Oscillator	6AF4	6AF4	7DK	
B	UHF Oscillator	6T4	6T4	7DK	
V2	IF Amplifier	6CB6	6CB6	7CM	
V3A	RF Amplifier	6BQ7A	6BQ7A	9AJ	
B	RF Amplifier	6B27	6B27	9AJ	
V4	Converter	6J6	6J6	7BF	
V5	1st. Video IF Amp.	6CB6	6CB6	7CM	
V6	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V7	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V8	Video Detector	6AL5	6AL5	5BT	
V9	Video Output	6AC7	6AC7	8N	
V10	AGC Keying	6AU6	6AU6	7BK	
V11	Sound IF Amp.	6AU6	6AU6	7BK	
V12	Ratio Detector-AF Amplifier-AGC Clamper	6T6	6T6	9E	
V13	Audio Output	6AQ5	6AQ5	7BZ	
V14	DC Restorer-Sync Separator-Sync Phase Inv.	12AU7	12AU7	9A	
V15	Vert.Osc- Vert. Discharge	6SN7GT	6SN7GT	8BD	
V16	Vert Oscillator	6AH4GT	6AH4GT	8EL	
V17	Horiz AFC	6AL5	6AL5	5BT	
V18	Horiz.Mult.	6SN7GT	6SN7GT	8BD	
V19	Horiz.Output	6BG6G	6BG6G	8BT	
V20	Damper	6W4GT	5W4GT	4CG	
V21	H V Rectifier	1B3GT	1B3GT	3C	
V22	L V Rectifier	6U4G	6U4G	4T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: SILVERTONE PART No.	SYLVANIA PART No.	GENERAL ELECTRIC PART No.	RTMA BASE TYPE	NOTES
V23	21AP4	21AP4	21AP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	+40	450	T18-295	AFH3-159		C118		FP375	TVL-3764	
B	+40	450								
C	+100	200								
C2A	+40	450	T18-295	AFH3-159		C118		FP375	TVL-3764	
B	+40	450								
C	+100	200								
C3	40	400	T18-308	PRS450/40		BR4045A		TC78	TVA-1712	
C4	8	500	T18-298	PRS500/8		BR850A		TC81	TVA-1902	
C5	20	450	T18-276	PRS450/20		BR2045		TC75	TVA-1708	
C6	4	50	T18-292	PRS150/4		BR415		TC30	TVA-1402	
C7	4	50	T18-292	PRS150/4		BR415		TC30	TVA-1402	
C8	4	50	T18-292	PRS150/4		BR415		TC30	TVA-1402	
C9	1									
C10	1									
C11	.8-6.5									
C12	1									
C13	.42									
C14	.25									
C15	.8-6.5									
C16	1.5									
C17	2.5									
C18	1									
C19	3-10									
C20	4									
C21	1.5									
C22	15									
C23	68			SI68	D6-680		GP1K-680	UC-5468	5GA-Q68	
C24	68			SI68	D6-680		GP1K-680	UC-5468	5GA-Q68	
C25	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C26	1000			BPD-001	DD-103	TM5D1	801-001	DC-521	5HK-D1	
C27	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C28	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C29	10			SI10	D6-100		GP1K-100	UC-541	5GA-Q1	
C30	10			SI10	D6-100		GP1K-100	UC-541	5GA-Q1	
C31	30			SI30	D6-300		GP1K-300	UC-542	5GA-Q8	
C32	30			SI30	D6-300		GP1K-300	UC-542	5GA-Q8	
C33	3-8				839-10					
C34	1000			CN-1-001	MFT-1000				503C-D1	
C35	3.6									
C36	1000			CN-1-001	MFT-1000				503C-D1	
C37	5-8				839-3			CT65A		
C38	47			BPD-000047	D6-470		GP1K-470	UC-5447	5GA-Q47	
C39	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C40	1.5			SIL.5ND9	TC2-1.5		NP0K-1R5	ZT-5515	5TCCB-V15	
C41	1000			CN-1-001	MFT-1000				503C-D1	
C42	47			BPD-000047	D6-470		GP1K-470	UC-5447	5GA-Q47	
C43	5-8				839-3			CT65A		
C44	10			SI10NP0	TC2-10		NP0K-100	ZT-541	5TCC-Q1	
C45	5			SI5N750	TCN-5		M750K-050	NT-555	5TCUB-V5	
C46	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C47	6.8			SI6.8NP0	TC2-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C48	1000			CN-1-001	MFT-1000				503C-D1	
C49	1000			CN-1-001	MFT-1000				503C-D1	
C50	120			BPD-00012	D6-121	TM5T12	GP3K-121	UC-5312	5GA-T12	
C51	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C52	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C53	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C54	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C55	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C56	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	

CAPACITORS (cont)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C57	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C58	1500		T18-341	BPD-0015	DD-152	TM5D15	801-0015	DC-521E	5HK-D15	
C59	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C60	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	Note 1
C61	5			SI5NP0	TC2-4.7		NP0K-050	ZT-5455	5TCC-V47	
C62	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	Note 1
C63	47				SI47NP0	TC2-47	NP0K-470	ZT-5447	5TCC-Q47	
C64	.2	600	T18-212							
C65	1000		T18-220	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C66	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C67	.47	2.00	T18-240	P288-47		P2D5	P2D5	DT405	ZT-947	
C68	2			SI2.2NP0	TC2-2.2		NP0K-2R2	ZT-5522	5TCCB-V22	
C69	22			SI22	D6-220		GP1K-220	UC-5422	5GA-Q22	
C70	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C71	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C72	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C73	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C74	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C75	270		T18-243	SI270	D6-271		GP3K-221	UC-5327	5GA-T27	
C76	3900		T18-228	BPD-002	DD-302	TM5D2	801-002	DC-523	5HK-D2	
C77	10000		T18-211	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C78	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C79	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C80	.01	600	T18-237	P688-01	D6-103		PTE8S1	GP2-333-103	PT6U	6TM-S1
C81	1000		T18-220	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C82	.2	400	T18-188							
C83	.01	600	T18-237	P688-01	D6-103	PTE8S1	GP2-333-103	PT6U	6TM-S1	
C84	150	600	T18-235	1466-00015	D6-151	5WST15	GP3K-151		1FM-S15	
C85	.047	600	T18-235	P688-047	DF-503	PTE6947		PT6147	6TM-S47	
C86A	.002			P688-002		PTE8D2		PT622		
B	.005		#T17-106	P688-005	#PC-100	PTE8D5	#1406-01	PT625	#101C1	
C	.005			P688-005		PTE8D5		PT625		
C87	.0047	600	T18-233							
C88	5000		T18-177	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C89	.056	600	T18-236							
C90	.1	600	T18-238	P688-1	DF-104	PTE8P1		PT601	6TM-P1	
C91	.1	400	T18-187	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C92	.033	600	T18-234	P688-033		PTE8S33		PT6133	6TM-S33	
C93	.0047	600	T18-233	P688-0047	D6-472	PTE8D47	GP2-333-472	PT6247	6TM-D47	
C94	.1	600	T18-238	P688-1	DF-104	PTE8P1		PT601	6TM-P1	
C95	1000		T18-220	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C96	1000		T18-220	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C97	.01	600	T18-237	P688-01	D6-103	PTE8S1	GP2-333-103	PT6U	6TM-S1	
C98	.0047	600	T18-233	P688-0047	D6-472	PTE8D47	GP2-333-472	PT6247	6TM-D47	
C99	.047	600	T18-235	P688-047	DF-503	PTE8S47		PT6147	6TM-S47	
C100	3900			1464-004		3DR5D4			MS-24	
C101	.22	600	T18-218	P688-22		PTE8P22		PT6025	6TM-P22	
C102	330	500	T18-226	1469-00035						
C103	330	500	T18-231	1469-0004		SRST4			MB-24	
C104	120		T18-232	BPD-00012	D6-121	TM5T12	GP3K-121	UC-5312	5GA-T12	
C105	.1	600	T18-238	P688-1	DF-104	PTE8P1		PT601	6TM-P1	
C106	.1	1000	T18-231	P1088-1		PTE10P1		PT1601	MB-P1	
C107	.047	1000	T18-239	P1088-047		PTE10S47		PT16147	MB-S47	
C108	500	20000	T18-239	HV20C	TV3-502	MMC-C20T5	413-501	HV20035A	20DK-T5	
C109	50	3000								
C110	.01	600	T18-237	889ZX-01		P28S1		PT6U	6TM-S1	
C111	.01	600	T18-237	889ZX-01		P28S1		PT6U	6TM-S1	

♦ Items C86A, C86B, C86C, R69A, R69B, R69C are combined in one unit.

Note 1. Chassis 528.247-1 uses a .47 MFD capacitor in this application.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1000Ω	½	T24-206	QJ-482*			UP13L	Contrast-Panel
B	500KΩ	½					UB55A	Volume-Rear
C	Switch						UB-26	Attach to R1B
R2A	Switch		T25-32					Phono Switch
B	500KΩ	½	Not Req.	Q1l-123	AG-58-S	AB-59	3U-50	Tone
C	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Not Req.	Attach to R2B
R3A	50KΩ	½	T25-21	Q1l-123	AG-44-S	AB-31	U-35	Horiz. Hold
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R3A
R4A	1 Meg	½	T25-22	Q1l-137	AG-61-S	AB-69	U-54	Vert. Hold
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R4A
R5A	50KΩ	½	T25-21	Q1l-123	AG-44-S	AB-31	U-35	Brightness
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R5A
R6A	2250 Ω	2	T25-14	WK-2500	A43-2500	VK-132	R2500L	Focus - Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R6A
R7A	2500Ω	½	T25-13	Q1l-112	AG-15-S	AB-7	3U-8	Vert. Linearity
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R7A
R8A	2 Meg	½	T25-15	Q1l-139	AG-83-S	AB-75	3U-56	Height
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R8A

♦ CONCENTRIKIT EQUIVALENT - KIT K-2, BASE ELEMENTS & SHAFTS B17-103 & P1-200 (Panel) B13-133 & R1-223 (Rear) & SWITCH 76-L.

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: SILVERTONE PART No.	IRC PART No.	NOTES
R9	1500Ω	½		BTS-1500	
R10	1500Ω	½		BTS-1500	
R11	12KΩ	½			
R12	150Ω	½		BTS-150	
R13	15KΩ	½		BTS-15K	
R14	47KΩ	½			
R15	100KΩ	½			
R16	160KΩ 5%	½			
R17	1500Ω	½		BTS-1500	
R18	100KΩ	½		BTS-100K	
R19	10KΩ	½		BTS-10K	
R20	220KΩ	½			
R21	10KΩ	½		BTS-10K	
R22	15KΩ	½			
R23	3300Ω	2	T60-816	BTS-3300	
R24	1000Ω	2	T60-703	BTS-1000	
R25	1000Ω	2	T60-703	BTS-1000	
R26	3300Ω	2	T60-862	BTS-3300	
R27	560	2	T60-806	BTS-56	
R28	1000Ω	2	T60-703	BTS-1000	

RESISTORS (cont)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: SILVERTONE PART No.	IRC PART No.	NOTES
R29	18KΩ	½	T60-777		
R30	1000Ω	½	T60-703	BTS-1000	
R31	56Ω	½	T60-806	BTS-56	
R32	1000Ω	½	T60-703	BTS-1000	
R33	18KΩ	½	T60-777		
R34	150Ω	½	T60-787	BTS-150	
R35	1000Ω	½	T60-703	BTS-1000	
R36	2.2Meg	½	T60-898	BTS-2.2Meg	
R37	33KΩ	½	T60-748	BTS-33K	
R38	220KΩ	½	T60-872	BTS-220K	
R39	470KΩ	½	T60-902	BTS-470K	
R40	47KΩ	½	T60-730	BTS-47K	
R41	12KΩ	½	T60-811	BTS-12K	
R42	3300Ω	½	T60-862	BTS-3300	
R43	680Ω	½	T60-708	BTS-330	
R44	3300Ω	1	T60-724	BTA-3300	
R45	2700Ω	1	T60-892	BTA-2700	
R46	33KΩ	½	T60-748	BTS-33K	
R47	39KΩ 5%	½	T60-893	BTS-39K 5%	
R48	100KΩ	½	T60-801	BTS-100K	
R49	10KΩ	20	T60-897	2D-10K	
R50	150Ω	½	T60-787	BTS-150	
R51	10KΩ	½	T60-800	BTS-10K	
R52	150Ω	½	T60-787	BTS-150	
R53	47KΩ	½	T60-730	BTS-47K	
R54	12KΩ	½	T60-811	BTS-12K	
R55	4.7Meg	½	T60-779	BTS-4.7Meg	
R56	270KΩ	½	T60-747	BTS-270K	
R57	100KΩ	½	T60-801	BTS-100K	
R58	180KΩ 5%	½	T60-788	BTS-180K 5%	
R59	330KΩ 5%	½	T60-787	BTS-330K 5%	
R60	800Ω	5	T60-800	1.9/4A-800	
R61	100KΩ	½	T60-801	BTS-100K	
R62	270KΩ	½	T60-747	BTS-270K	
R63	1.2Meg	½	T60-783	BTS-1.2Meg	
R64	22KΩ	½	T60-744	BTS-22K	
R65	680KΩ	½	T60-807	BTS-680K	
R66	220KΩ	½	T60-714	BTS-220K	
R67	3900Ω	½	T60-710	BTS-3900	
R68	3300Ω	½	T60-862	BTS-3300	
R69A	22KΩ	½			
B	8200Ω	½	#T17-106	BTS-8200	
C	8200Ω	½		BTS-8200	
R70	1.2Meg	½	T60-783	BTS-1.2Meg	
R71	15KΩ	½	T60-783	BTS-15K	
R72	1.5Meg	½	T60-880	BTS-1.5Meg	
R73	220KΩ	½	T60-872	BTS-220K	
R74	8200Ω	½	T60-778	BTS-8200	
R75	2.2Meg	½	T60-898	BTS-2.2Meg	
R76	180Ω	7	T60-889	BTA-180	
R77	15KΩ	½	T60-783	BTS-15K	
R78	15KΩ	½	T60-783	BTS-15K	
R79	560Ω	½		BTS-560	
R80	560Ω	½		BTS-560	
R81	1000Ω	½		BTS-1000	
R82	15KΩ	2	T60-888	BTS-15K	
R83	100KΩ	½	T60-801	BTS-100K	
R84	100KΩ	½	T60-801	BTS-100K	
R85	4.7Meg	½	T60-779	BTS-4.7Meg	
R86	470KΩ	½	T60-731	BTS-470K	
R87	1500Ω	½	T60-729	BTS-1500	
R88	8200Ω	½	T60-778	BTS-8200	
R89	120KΩ	½	T60-817	BTS-120K	
R90	220KΩ	1	T60-886	BTA-220K	
R91	56KΩ	½	T60-823	BTS-56K	
R92	10KΩ	½	T60-760	BTS-10K	
R93	1Meg	½	T60-868	BTS-1Meg	
R94	200Ω	½	T60-752		
R95	100Ω	½	T60-752		
R96	47Ω	1	T60-805	BW-1-47	
R97	15KΩ	6	T60-804	1.9/4A-15K	
R98	3.3Ω	½	T60-864		
R99	1Meg	1	T60-877		
R100	330Ω	2	T60-814	BTB-330	
R101	3300Ω	2	T60-816	BTB-3300	
R102	8200Ω	2	T60-878	BTB-8200	
R103	2200Ω	2	T60-872	BTS-220K	
R104	8200Ω	½	T60-778	BTS-8200	Note

♦ Items R69A, R69B, R69C, C86A, C86B, C86C are combined in one unit.
Note Used only in chassis # 528.247-1.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA TYPE No.
T1	117VAC @ 2A	780VCT .210ADC	5VAC @ 3A SEC. 4	6.3VAC @ .99A SEC. 5	80-264	P-8189	P-3053 ①			
			6.3VAC @1.15A	5VAC @7.4A						

① Use high taps on high voltage secondary.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA TYPE No.	NOTES
T2	170Ω	940Ω	T80-267	A-8125①	A-3009①	T80-5①	A-97E①	308T2 ②	Vert. Osc. Trans.
T3	4280Ωtap @.5Ω, 7.2Ω, 14.3Ω, 21.7Ω, 37.7Ω	3.3Ω SEC. 3 0Ω	T80-278					332T1③④	Horiz.Output Trans.
T4	100Ω tap ④ 11.6Ω		T80-277	A-8123	A-3037	T80-8①	A-102X	322T1	Vert.Output Trans.
T5A	38.4Ω		T83-743	DY-9A①	MDF-72	TY-3 ①	Y-17	311D2	Horiz.Deflection Coils
B	47Ω								Vert. Deflection Coils
T6	420Ω		T10-560	FC-11	MF-2	TC-2 ⑤	B-470-R		Focus Coil
T7	72Ω		T10-582	MWC-6	WC-12	TW-7 ①	WC-12③	313R1	Horiz.Lin.Coil
T8	.6Ω		T10-551	WC-1		TW-1		301R1	Width Coil

① Drill one new mounting hole.
② Connect as auto trans.
③ Use original horiz. deflection coil network if necessary.
④ Use original deflection coil network.
⑤ Fabricate new mounting bracket.
⑥ Connect to coded blue & green terminals.
⑦ Mount on top of chassis.
⑧ See instruction sheet packed with unit for terminal connections.
⑨ Use with width coil 312R1.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES PRI.	RATING: DC RES SEC.	REPLACEMENT DATA: SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T9	5.4KΩ	3.3Ω	260Ω	.44Ω	80-253	A-3949	A-3019	RO-9 ①	S-5X ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: SILVERTONE PART No.	VIKING PART No.	QUAM PART No.	NOTES
SP1	10"	PM	3.3Ω	79-406	10J11	10A31	

SILVERTONE MODELS 31711A, 4140, 4143, 4145, 4150, 4153, 4155 (Ch. 528.247, -1)

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	SILVERTONE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1A	UHF Ant. Coil	0Ω						
B	UHF Mixer Coil	0Ω						
C	UHF Osc. Coil	0Ω						
L2	UHF Ant. Coil End Inductor	0Ω						
L3	UHF Mixer Coil End Inductor	0Ω						
L4	UHF Osc. Coil End Inductor	0Ω						
L5	Fil. Choke	.1Ω						
L6	Fil. Choke	.1Ω						
L7	Cathode Choke	0Ω						.38 Microhenry
L8	RF Choke	0Ω						.38 Microhenry
L9	UHF IF Coupling	0Ω						
L10	UHF IF Input Trans.	0Ω	0Ω					
L11	RF Choke	0Ω						
L12	UHF IF Output Trans.	0Ω	0Ω					
L13	Ant. Coils	0ΩCT	0Ω					
L14	Fil.Choke	0Ω						
L15	Neutr.Coil	0Ω						
L16	RF, Mixer Grid & Osc. Coils	0Ω						
L17	Fil.Choke	0Ω						
L18	RF Choke	0Ω						
L19	lst. Video IF	1Ω						
L20	RF Choke	1.3Ω						
L21	2nd. Video IF	.3Ω	.3Ω	T10-541	17-1062		6250	
L22	3rd. Video IF	.3Ω	.3Ω	T10-542	17-1063		6249	
L23	Fil. Choke	.41Ω		T33-236	19-3001	TV-189	4602	1 Microhenry (IRC part #CL-1)
L24	4th. Video IF	.6Ω	.7Ω	T10-588				Includes trap
L25	Series Peaking Coil	1Ω		T33-226			4624	14 Microhenries
L26	Series Peaking Coil	6Ω		T10-557	19-3093	TV-181	6177	90 Microhenries
L27	Shunt Peaking Coil	13Ω		T10-579	19-3500	TV-188	6174	550 Microhenries
L28	Series Peaking Coil	6Ω		T10-580	19-3180 *	TV-184 *	6180 *	175 Microhenries, wound on 8.2KΩ resistor
L29	4.5MC Trap	3.2Ω		T10-581	20-1004	TV-151	1469	
L30	Shunt Peaking Coil	11Ω		T10-578	19-4412		4648	410 Microhenries Wound on 10KΩ resistor
L31	Sound IF	2.7Ω		T10-587	20-1005	TV-151	1469	
L32	Ratio Det.	3.8Ω	.3ΩCT	T10-552	17-1033 †	TV-110 †	1469 †	Tertiary winding-.95Ω
L33	Horiz. Osc.	65Ω		T10-583	19-1576	TV-163	6210	Silvertone part number includes C100

* Parallel with 8.2KΩ resistor.
† Drill mounting holes.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			SILVERTONE PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	5 Amp. 250V.	T43-12	T87-44	312005 (3AG/5A)	341001	MTH5	HKP
M2	3AG (P/T)	1/4 A. 250V.	T43-13		318.250 (3AG 1/4A P/T)		GJV 1/4	

MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M3	Pilot Light	T89-7	Type #47
M4	RF Tuner	T95-32	UHF
M5	Crystal Diode		UHF Mixer (Type 1N72)
M6	RF Tuner	T95-31	VHF
M7	Ion Trap	T83-684	
B2	Trimmer Cap.	T20-145	Horiz. Drive
	Cabinet	T42-558	Model 3171A
	Cabinet	T42-575	Model 4140
	Cabinet	T42-584	Model 4143
	Cabinet	T42-579	Model 4145
	Cabinet	T42-577	Model 4150
	Cabinet	T42-585	Model 4153
	Cabinet	T42-578	Model 4155
	Back Cover	T32-23	Model 3171A
	Back Cover	T32-28	Models 4140, 4143, 4145, 4150, 4153, 4155
	Mask Plate	T31-209	
	Mask Plate	T31-226	Models 4140, 4143, 4145, 4150, 4153, 4155
	Safety glass	T48-68	Models 4140, 4143, 4145, 4150, 4153, 4155
	Control Cover Assy.	T84-717	
	Knob	T52-390	TV-Phono Selector
	Knob	T52-403	Channel Selector
	Knob	T52-412	Fine Tuning
	Knob	T52-404	Contrast
	Knob	T52-405	Off-On-Volume

TROUBLE SHOOTING AIDS (cont)

PROPERTY OF

AUDIO

WEAK OR NO SOUND

Check by substitution V11, V12 and V13. Check stages of V12b and V13 by applying audio signal to control grid pin 7.

If Satisfactory	If Unsatisfactory
Check adjustment of ratio detector. Check components associated with V11 and V12A.	Check components associated with V12b and V13 especially T9 and SP1.

BUZZ

Readjust ratio detector secondary for minimum buzz. Check audio IF alignment. If buzz is still objectionable substitute V12 and readjust A8.

DISTORTED

Check stages of V12b and V13 using audio signal generator and scope.

If Distorted	If Undistorted
Check components associated with these stages especially coupling and bypass capacitors.	Check alignment and components of the audio IF amplifier and ratio detector stages.

POWER

DEAD SET

Check fuse M1. Check AC interlock assembly. Check switch on volume control. Check T1.

SMALL AND/OR DIM RASTER

Substitute V22. Check B+ filter and decoupling network.

DIM PICTURE WEAK SOUND

Substitute V22. Check B+ network.

HIGH VOLTAGE

LOSS OF HIGH VOLTAGE

Check 1/4 Amp fuse (M2). Check by substitution V18, V19, V20, V21 and V22. Check waveform W14.

If Satisfactory	If Unsatisfactory
Check R 98, R 99, C108, T3, T5A and other associated components.	Check C102, C103, C104 and other associated components.

INSUFFICIENT HIGH VOLTAGE

Check by substitution V18, V19, V20, V21 and V22. Proceed as outlined under "LOSS OF HIGH VOLTAGE".

BLOOMING

Check V19, V20 and V21 by substitution. Check R98, R99, C108, T3, T5A and other components associated with the high voltage section Check picture tube for gassy condition or low emission.

GENERAL

RASTER SOUND NO PICTURE

See "LOSS OF VIDEO".

TOTAL LOSS OF SYNC

Check by substitution V14. Check components associated with this stage.

INTERMITTENT STREAKS

Check high voltage section for corona discharge and arcing.

SNOWY PICTURE POOR SOUND

Check by substitution V3, V4, V5, V6, V7 and V8. Check associated circuit components.

SNOWY PICTURE ON UHF (GOOD ON VHF).

Check V1 and V2. It may be necessary to try several tubes to find one that will operate satisfactory.

RASTER NO SOUND NO PICTURE

Check V3, V4, V5, V6, V7, V8, V9 and V13. Check associated circuit components.

Symptoms shown are assumed and are not indicative of the quality and workmanship of this receiving equipment.

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF tuner oscillator circuit may be accomplished by removal of the channel selector and fine tuning knobs. The adjustments are accessible, one at a time, through the small hole in the cabinet to the right of the channel selector shaft. Also, remove UHF channel selector knob.

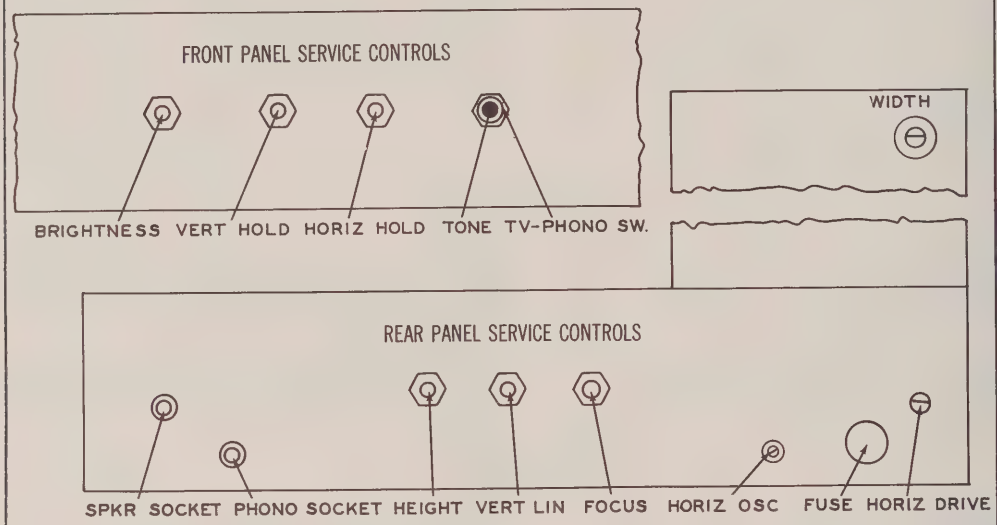
PICTURE TUBE SAFETY GLASS CLEANING

To clean safety glass, remove 6 metal screws holding bezel. Remove bezel and safety glass. Use extreme caution when removing safety glass.

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION



HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator circuit may be made from the rear panel of the chassis. Set the horizontal hold control at the mid-position of its range and adjust the horizontal oscillator slug (L33) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (L32) located on top of chassis. (See tube placement chart).

FUSES

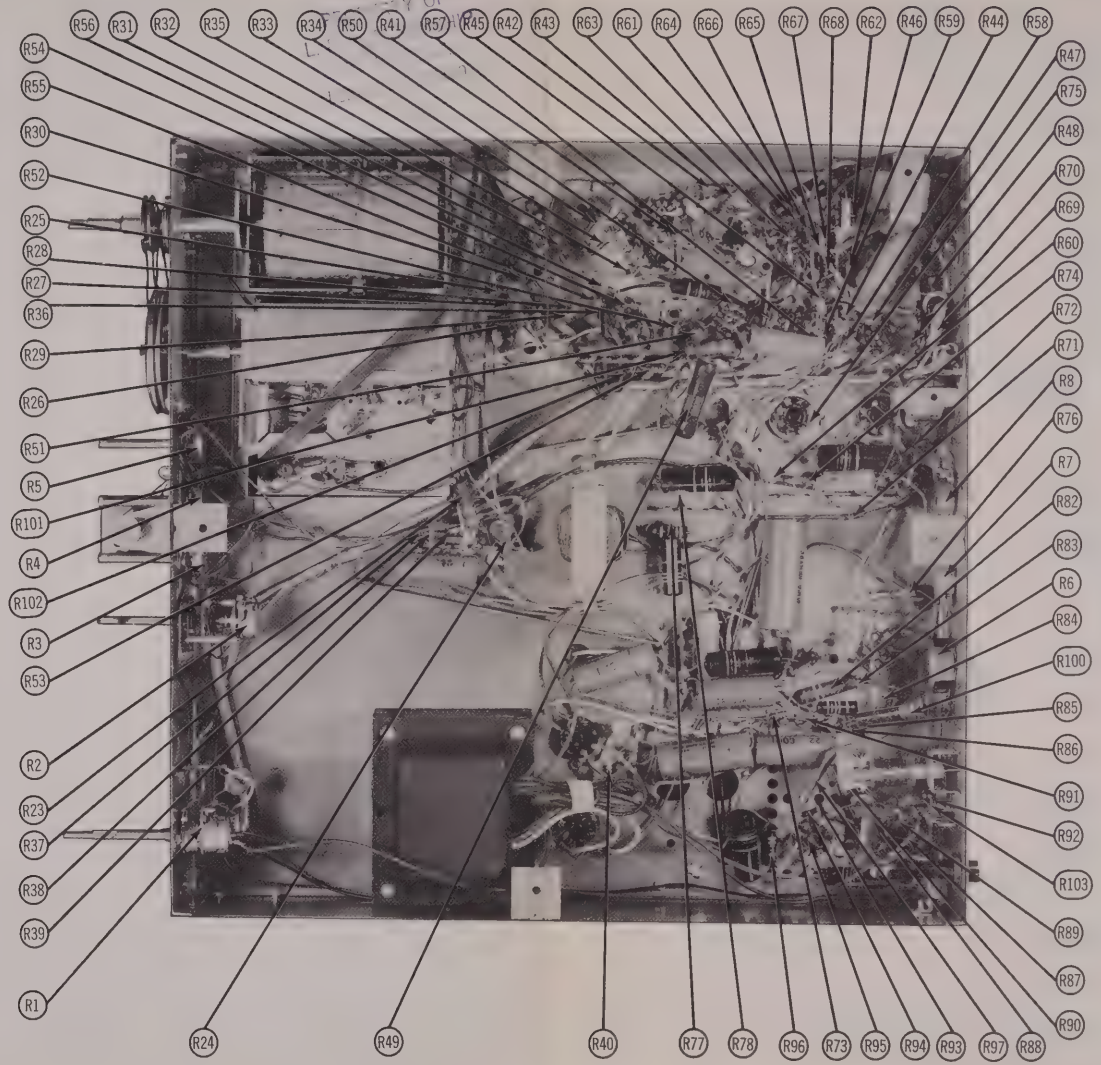
Two fuses are used. One for horizontal sweep circuit protection and one for LV power supply protection. (For location, see tube placement chart).

CENTERING

Centering is accomplished mechanically by positioning the focus coil. Adjust the three wing nuts located on the focus coil bracket until picture is properly centered.

DISASSEMBLY INSTRUCTIONS

1. Remove 4 push on type control knobs from front panel.
2. Loosen 7 wood screws. Raise rear cover and remove.
3. Disconnect VHF and UHF built-in antenna.
4. Remove 4 wood screws. Remove VHF and UHF antenna brackets.
5. Disconnect speaker. Remove 4 speaker nuts. Remove speaker.
6. Remove 4 chassis bolts. Remove chassis.



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

PROPERTY OF
L. E. [illegible] SHIP

STEELMAN
MODEL 3AR1

TRADE NAME	Steelman Model 3AR1
MANUFACTURER	Steelman Phono & Radio Co., Inc., 12-30 Anderson Ave., Mt. Vernon, N.Y.
TYPE SET	AC Operated Radio-Phono Combination Superheterodyne Receiver with 3 Speed Automatic Record Changer
TUBES (Five)	Types 12BE6 Conv., 12BA6 IF Amp., 12AT6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycle
RATING	.22 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400~Mod)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1600KC	"	"	A5	"
3.		Loop	1400KC	Tune to 1400KC signal	"	A6	Fashion loop fo several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

Replace chassis in cabinet, turn tuning gang fully closed and set pointer to first "5" in "55" on the dial.

FOR SERVICE INFORMATION ON RECORD CHANGER UNIT- COLLARO MODEL 3/522 SEE PHOTOFACT SET #205, FOLDER 4.

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

STEELMAN MODEL 3AR1

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		STEELMAN PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det.-AVC-AF Amp.	12AT6	12AT6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	STEELMAN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	40	150		PRS150/50-		EDL44215		3N532	TVA-3448	
B	40	150		30-20						
C	20	150								
C2	.05	400		P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C3	220	500		1469-00025	D6-221	5W5T25	GP2K-221	MC240	1FM-325	
C4	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C5	.005	600		P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C6	220	500		1469-00025	D6-221	5W5T25	GP2K-221	MC240	1FM-325	
C7	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C8	.002	600		P688-002	D6-202	PTE6D2	GP2-333-202		4TM-P1	
C9	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C10	.1	400		P488-1		PTE4P1		PT622	6TM-D2	
C11	.01	600		689ZX-01		PJ6S1		PT611	6TM-S1	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	STEELMAN PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	1 Meg	½	VC-18	Q13-137	AG-63-Z	B-70-S	U-53	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A
R2A	500KΩ	½	VC-19	Q11-133	AG-58-S	B-59	U-50	Tone
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R2A

RESISTORS

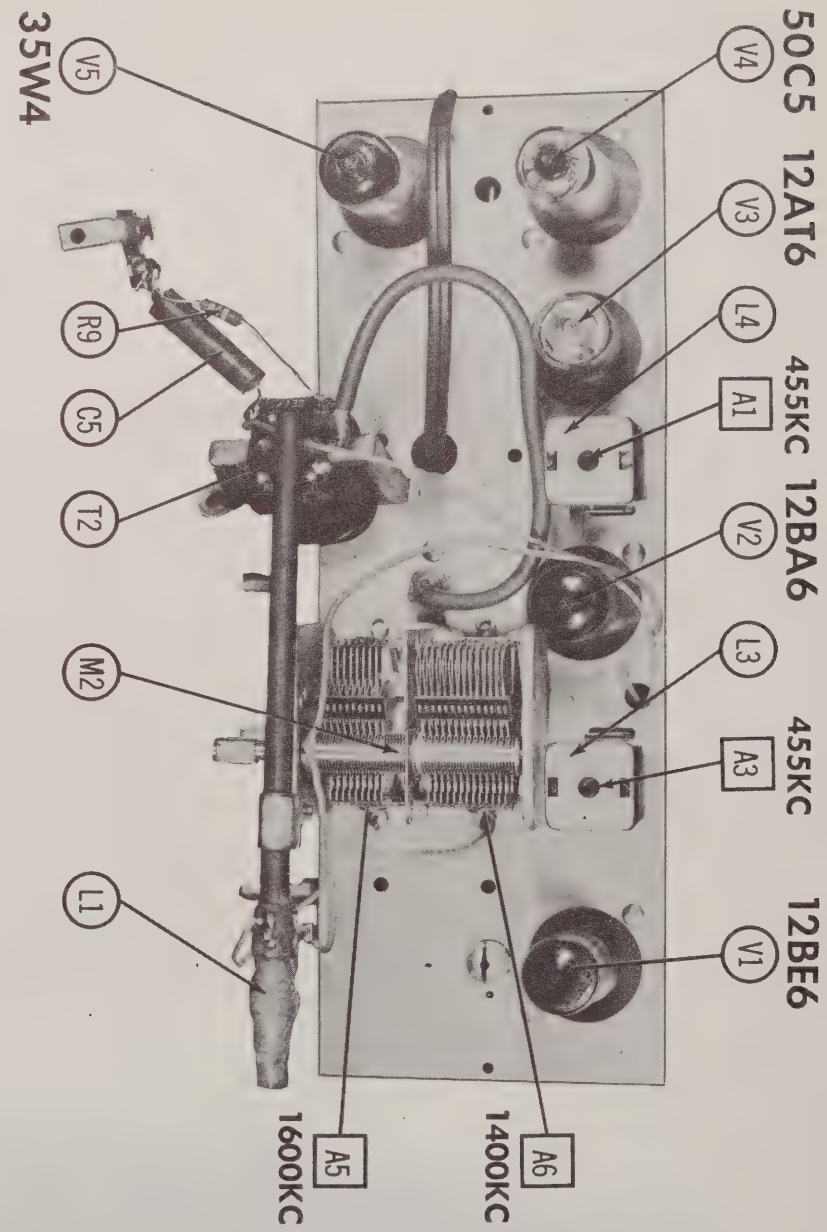
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	STEELMAN PART No.	IRC PART No.	
R3	22KΩ	1/2		BTS-22K	
R4	220Ω	1/2		BTS-220	
R5	2.2Meg	1/2		BTS-2.2Meg	
R6	4.7Meg	1/2		BTS-4.7Meg	
R7	220KΩ	1/2		BTS-220K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	STEELMAN PART No.	IRC PART No.	
R8	150Ω	1		BTA-150	
R9	68KΩ	1/2		BTS-68K	
R10	18Ω	1/2			
R11	330Ω	1		BTA-330	
R12	2200Ω	1		BTA-2200	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		STEELMAN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.56KΩ	3.2Ω	164Ω	.55Ω	P-4200	A-3876 ①	A-3025 ①	RO-302 ①	S-1X ①	①Bend mtg.tabs down, file out slots, mount on original mtg. bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (INPUT)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	STEELMAN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T2	1.43Ω	2.85KΩ							
	Turns 94	Ratio to 1							

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	STEELMAN PART No.	VIKING PART No.	QUAM PART No.	
SP1	4"X6"	PM	3.2Ω	SP-49	46J6	46A1	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	STEELMAN PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Coil	.8Ω						
L2	Osc. Coil	.5Ω	5.5Ω		14-1073		69-Osc.	
L3	Input IF	22Ω	22Ω	LF-50	16-6758	BC-352	12-C1	
L4	Output IF	22Ω	22Ω	LF-50	16-6758	BC-353	12-C2	

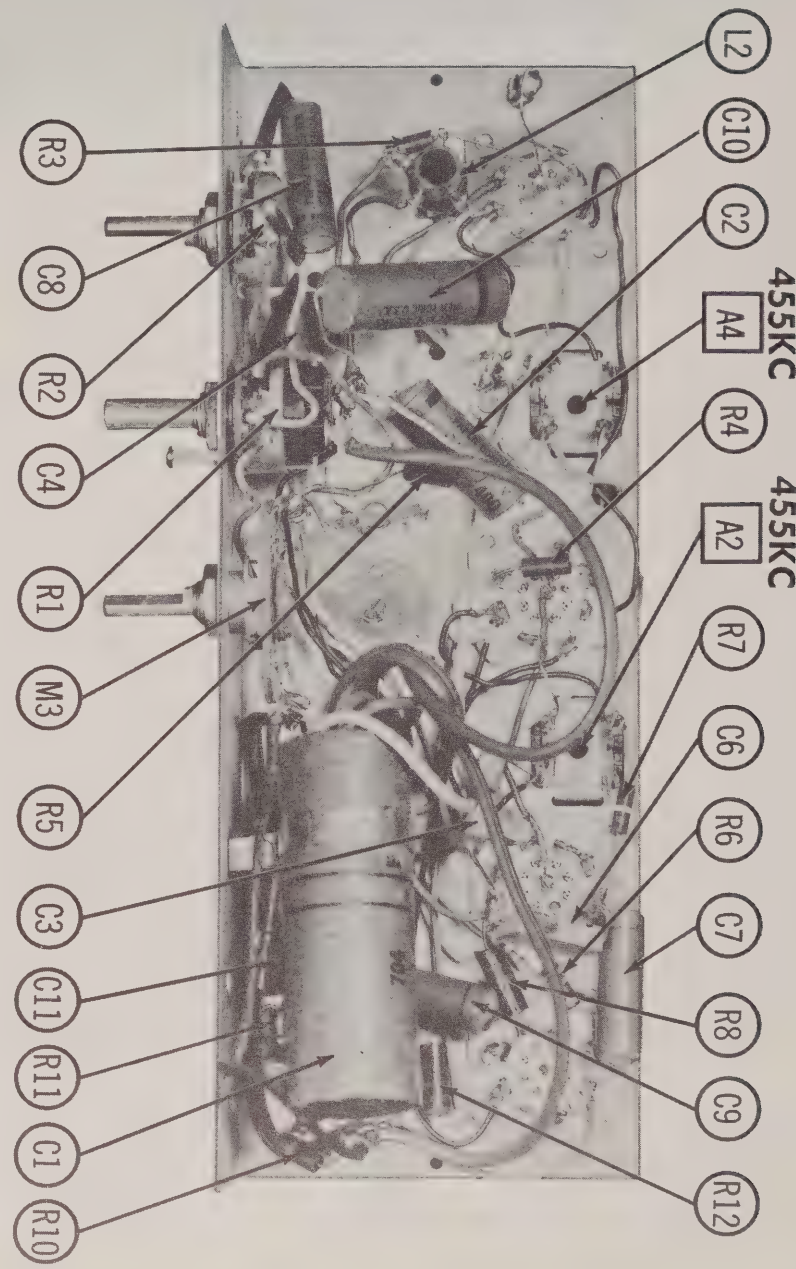
PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA							REMARKS
	STEELMAN PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1								

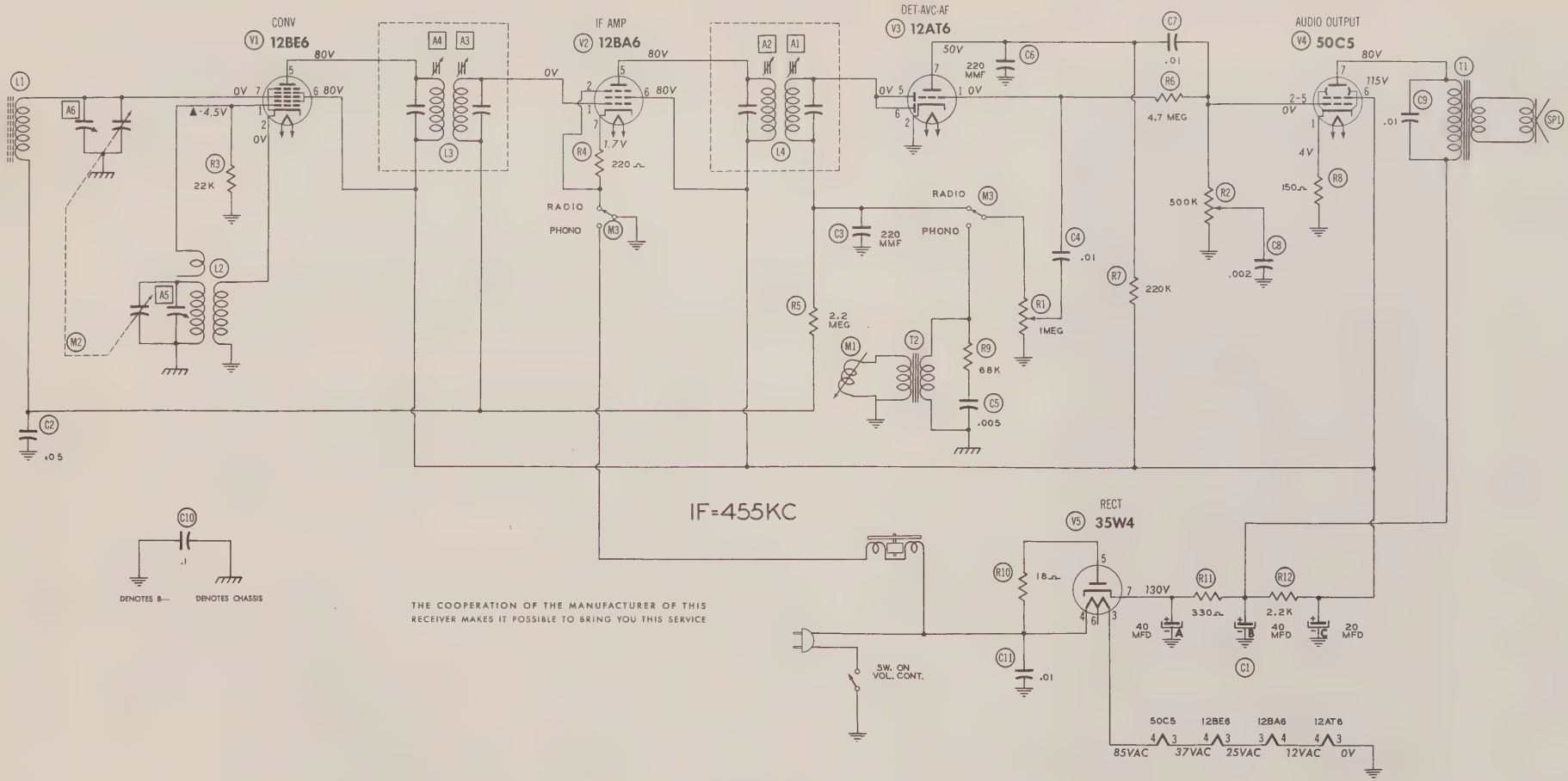
MISCELLANEOUS

ITEM No.	PART NAME	STEELMAN PART No.	NOTES
M2	Tuning Capacitor	CV21	46-457MMF, 29-190MMF

CHASSIS—BOTTOM VIEW



STEELMAN MODEL 3AR1



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.5Ω	24Ω	36Ω	†2.5KΩ	†2.5KΩ	3.2Meg
V 2	12BA6	3.2Meg	0Ω	24Ω	12Ω	†2.5KΩ	†2.5KΩ	220Ω
V 3	12AT6	5.2Meg	0Ω	0Ω	12Ω	1 Meg	1 Meg	†220KΩ
V 4	50C5	150Ω	500KΩ	85Ω	36Ω	500KΩ	†2.5KΩ	†495Ω
V 5	35W4	†330Ω	†330Ω	85Ω	120Ω	138Ω	INF	100KΩ

ALL MEASUREMENTS TAKEN IN RADIO POSITION
▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 7 OF V5.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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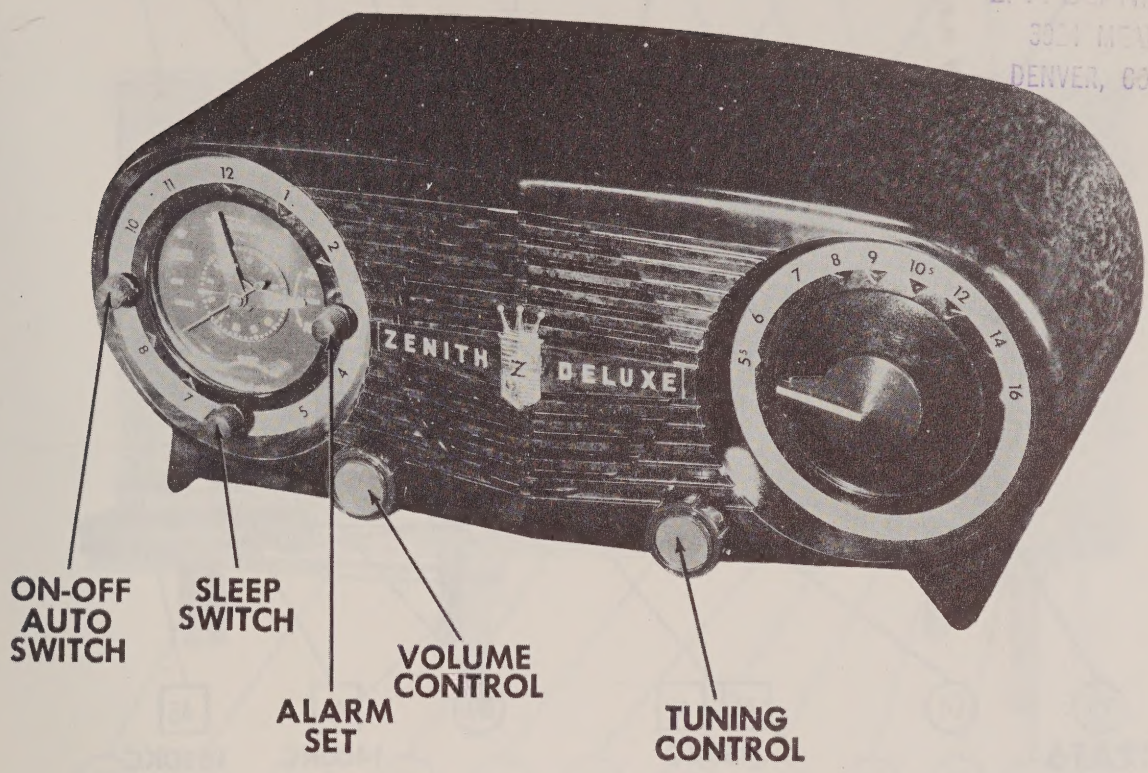
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

ZENITH
MODELS L518, F, G, W, Y (Ch. 5L03)

PROPERTY OF
L. F. BLANKENSHIP
3824 MONDE ST.
DENVER, COLORADO

ZENITH
MODELS L518, F, G, W, Y (Ch. 5L03)



ZENITH
MODELS L518, F, G, W, Y (Ch. 5L03)

TRADE NAME	Zenith Model L518, F, G, W, Y (Ch. 5L03)
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago, Ill.
TYPE SET	AC Operated AM Superheterodyne Receiver with Electric Clock
TUBES (Five)	Types 12BE6 Conv., 12BA6 IF Amp., 12AT6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycles — RATING .28 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535-1620 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 1 (grid) of 12BE6 (V1). Low side to B-.	455KC (400~Mod)	600KC	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1620KC	Tuning gang fully open	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1400KC	Tune to 1400KC signal	"	A6	"

To set pointer turn tuning gang fully closed and set pointer parallel to base of cabinet of low frequency end of the dial.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: ZENITH PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det-AVC-AF Amp.	12AT6	12AT6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	■80	150	22-2351	AFH2-19		BO18			TVL-2442	
B	▲40	150								
C2	.05	200	22-829	P288-05	DF-503	PTE4S5		PT415	2TM-S5	
C3	250		22-1666	SI250	D6-251		GP2K-251	UC-5325	5GA-T25	
C4	.05	200	22-829	P288-05	DF-503	PTE4S5		PT415	2TM-S5	
C5	10000		22-3	BPD-01	D6-103	TM5S1	GP2-333-103	DC-511	5HK-S1	
C6	470		22-6	BPD-00047	D6-471		GP2K-471	UC-5347	5GA-T47	
C7	10000		22-3	BPD-01	D6-103	TM5S1	GP2-333-103	DC-511	5HK-S1	
C8	.01	400	22-1182	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C9	10000		22-3	BPD-01	D6-103	TM5S1	GP2-333-103	DC-511	5HK-S1	
C10	.05	200	22-829	P288-05		PTE4S5		PT415	2TM-S5	

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ZENITH PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500KΩ	½	63-2393	Q11-133	AG-58-S	AB-59	U-50	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R1A

RESISTORS

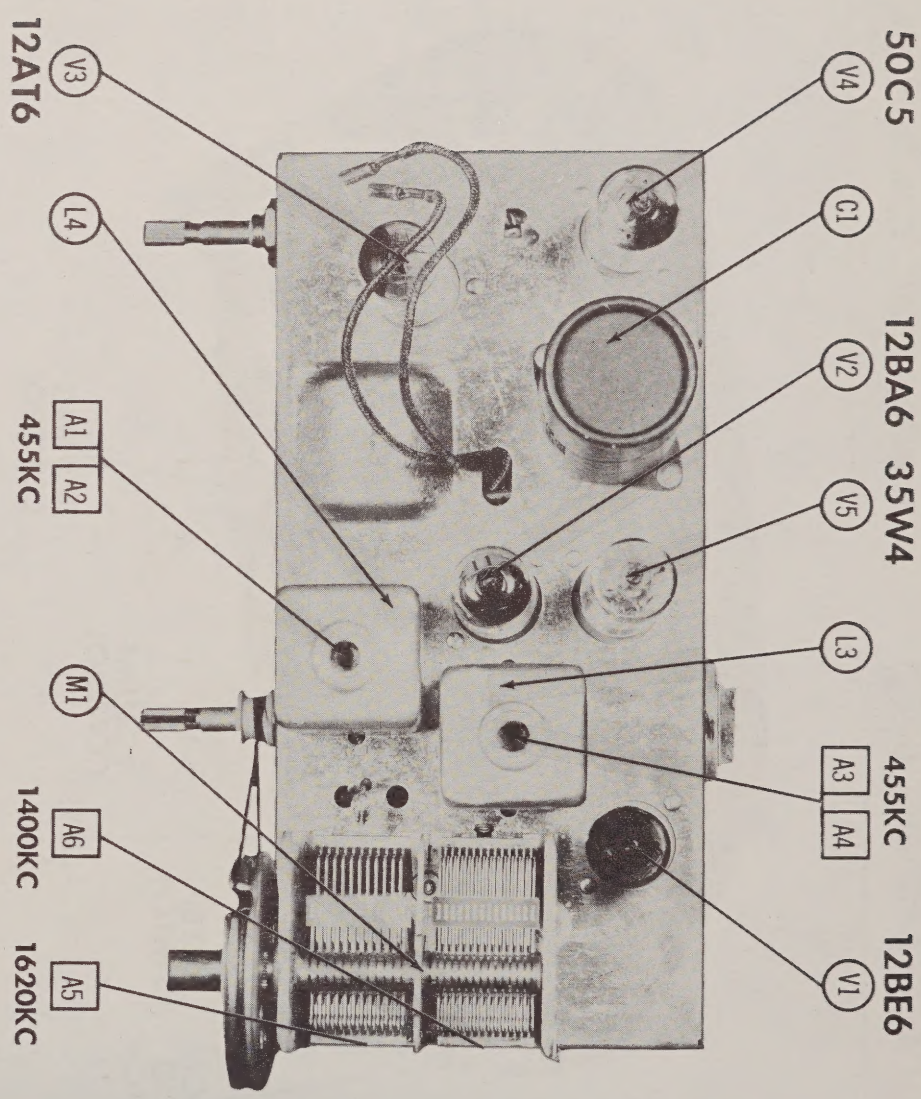
ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: ZENITH PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R2	22KΩ	½	63-1842	BTS-22K	
R3	2.2Meg	½	63-1926	BTS-2.2Meg	
R4	68Ω	½	63-1737	BTS-68	
R5	4.7Meg	½	63-1940	BTS-4.7Meg	
R6	470KΩ	½	63-1898	BTS-470K	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: ZENITH PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R7	470KΩ	½	63-1898	BTS-470K	
R8	150Ω	1	63-1977	BTA-150	
R9	1000Ω	1	63-965	BTA-1000	
R10	22Ω	1	63-1450		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T1	2.6KΩ	3.3Ω	193Ω tap ⓐ 6Ω	.64Ω	95-1293	A-3849 ①	A-3031 ①	RO-3 ①	S-IX ①	① Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	ZENITH PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.3Ω	49-713	ST-113 Mod. P4-X	4A07	

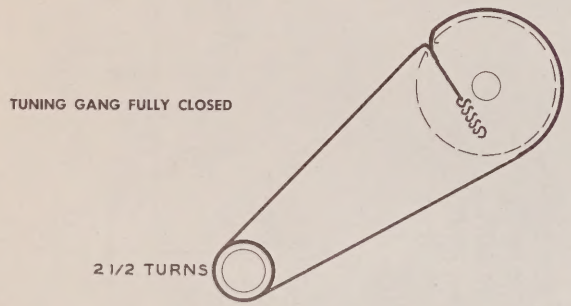
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	ZENITH PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Ant.	3.1Ω		S-20142				Includes cabinet back
L2	Osc. Coil	.7Ω	6.5Ω	S-18616			70-Osc. *	
L3	Input IF	18Ω	18Ω	95-1101	16-6666	BC-368	012-C1	
L4	Output IF	17Ω	17Ω	95-1102	16-6770 †	BC-355	12-C6 †	

* Disregard tap on secondary winding.
† Use adaptor plate and cut out center spadebolt mounting support.

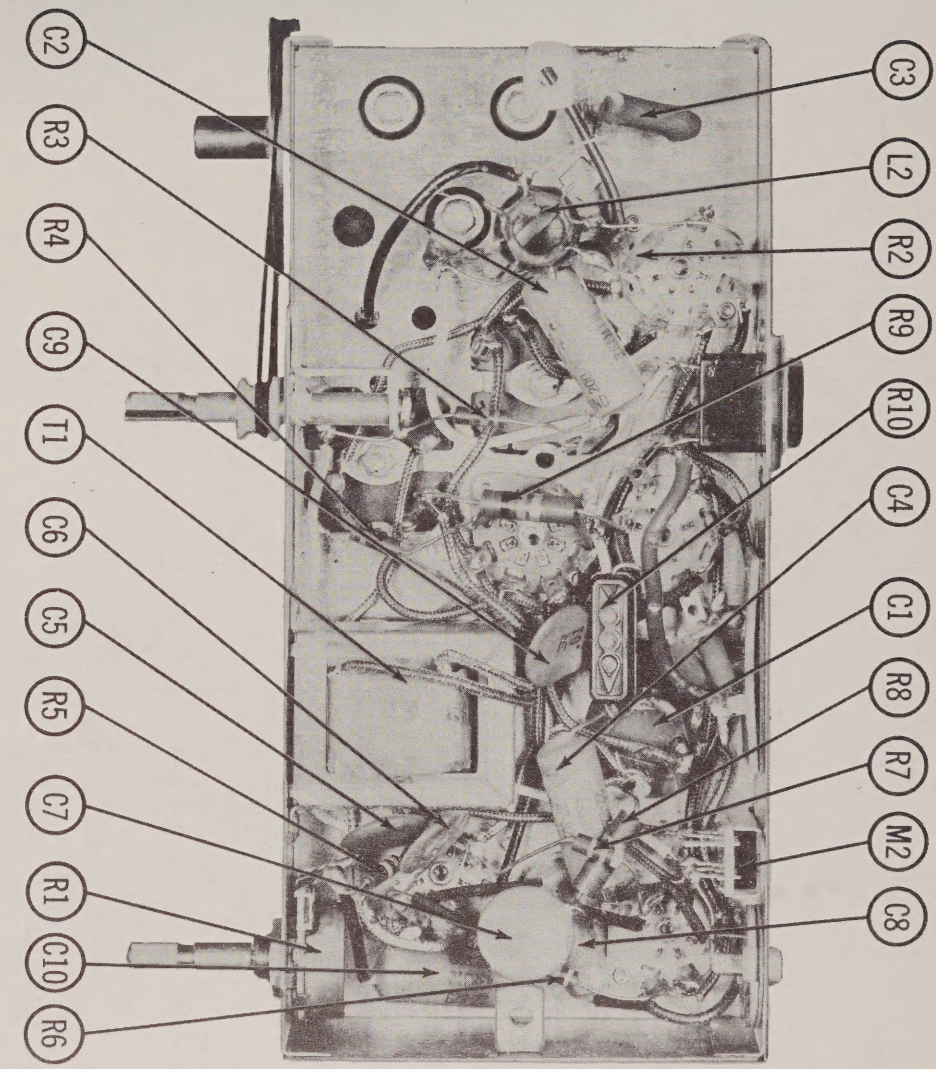
MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M1	Tuning Capacitor	22-2386	34-457MMF, 27-195MMF
M2	Switch	85-495	Radio-Phono Selector
	Clock Assy.	S-18629	Model L518
	Clock Assy.	S-18534	Models L518F, L518G, L518W, L518Y
	Clock Cover	S-18925	
	Clock Dial Glass	192-145	
	Clock Escutcheon	57-1782	
	Cabinet	14-1454	Model L518
	Cabinet	14-1455	Model L518F
	Cabinet	14-1503	Model L518G
	Cabinet	14-1453	Model L518W
	Cabinet	14-1451	Model L518Y
	Dial Scale	26-466	
	Pointer	59-267	Model L518
	Pointer	59-265	Models L518F, L518G, L518W, L518Y
	Knob	46-904	Clock (3 used), Model L518
	Knob	46-905	Clock (3 used), Models L518F, L518G, L518W, L518Y
	Knob	46-943	Volume, Tuning (2 used), Model L518
	Knob	46-941	Volume, Tuning (2 used), Models L518F, L518G, L518W, L518Y

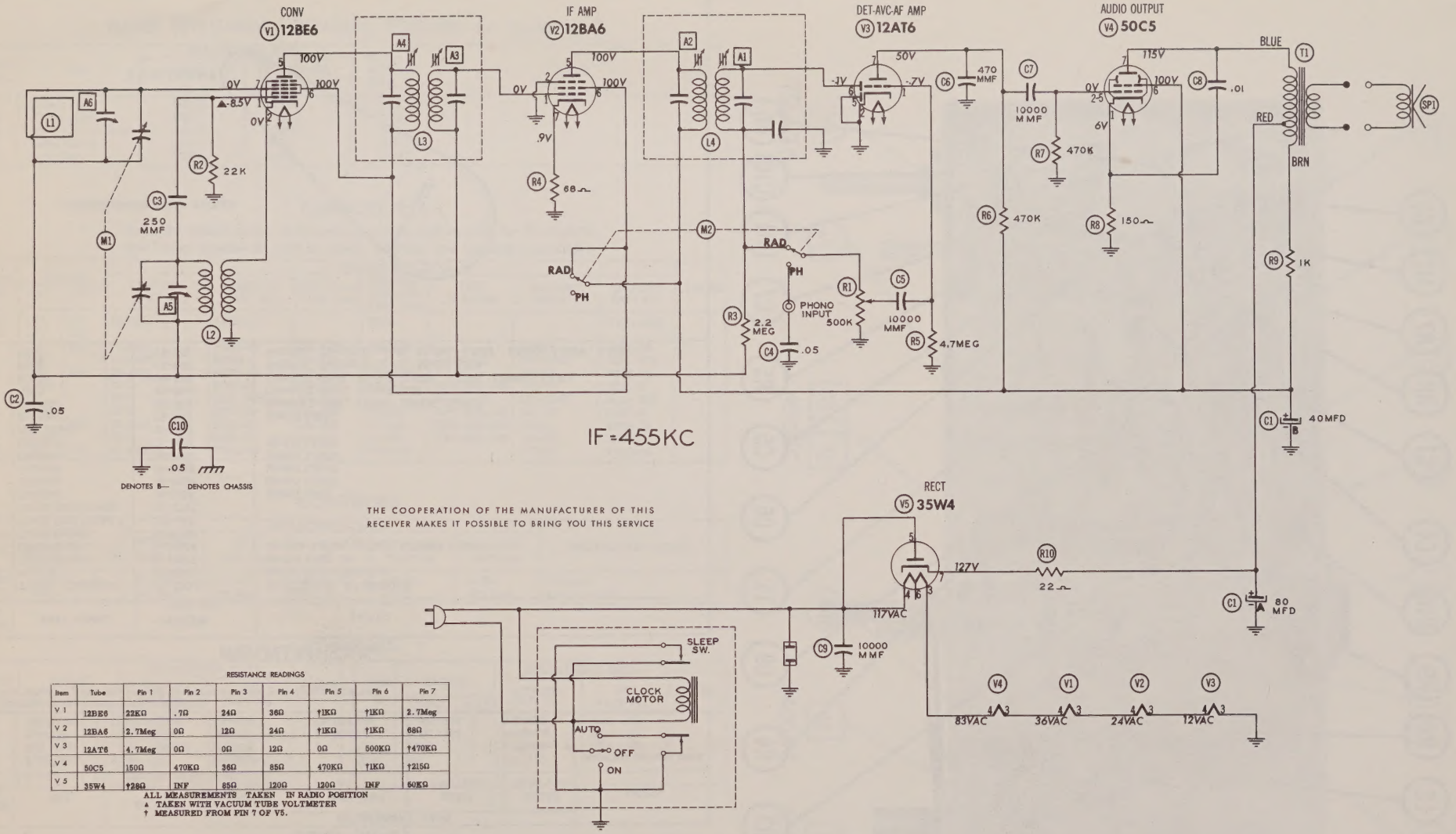


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



ZENITH
MODEL L518 (Ch. 5L03)



Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.7Ω	24Ω	36Ω	†1KΩ	†1KΩ	2.7Meg
V 2	12BA6	2.7Meg	0Ω	12Ω	24Ω	†1KΩ	†1KΩ	68Ω
V 3	12AT6	4.7Meg	0Ω	0Ω	12Ω	0Ω	500KΩ	†470KΩ
V 4	50C5	150Ω	470KΩ	36Ω	85Ω	470KΩ	†1KΩ	†215Ω
V 5	35W4	†28Ω	INF	85Ω	120Ω	120Ω	INF	60KΩ

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.